DOCUMENT RESUME

ED 061 701 EC 041 909

TITLE	Selected Convention Papers: 46th Annual International CEC Convention (New York, New York, April 14-20, 1968).
INSTITUTION	Council for Exceptional Children, Arlington, Va.
SPONS AGENCY	Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C.
PUB DATE	68
NOTE	358p.
EDRS PRICE	MF-$0.65 HC-$13.16
DESCRIPTORS	Abstracts; Administration; Aurally Handicapped; Comparative Education; *Conference Reports; Design Needs; Emotionally Disturbed; *Exceptional Child Education; Gifted; *Handicapped Children; Homebound Children; Hospitalized Children; Instructional Materials; Learning Disabilities; Mentally Handicapped; Speech Handicapped; Teacher Education; Visually Handicapped

ABSTRACT

A collection of selected convention papers is presented on the following topics: the gifted child, children with behavioral disorders, the visually handicapped, programs in special education, the homebound and hospitalized, children with learning disabilities, international aspects of special education, general articles, administration programs, children with communication disorders, mentally retarded children, research in special education, teacher training programs, and general session addresses. Each unit of reports is available on microfiche. (This document previously announced as ED 031 865.) (WW)

CEC Selected
Convention Papers
NEW YORK CITY

1968

46TH ANNUAL INTERNATIONAL
CEC CONVENTION

ED 061701

EC 041 909E

SELECTED CONVENTION PAPERS

46th Annual International Convention
New York City
April 14-20, 1968

The Council for Exceptional Children, NEA
1201 Sixteenth Street, Northwest, Washington, D. C. 20036

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THE GIFTED

DIFFERENTIAL EDUCATION FOR THE GIFTED: THEORETICAL PRINCIPLES

by

Virgil S. Ward

The history of efforts in American education to conceptualize from a mountainous knowledge about persons and how they differ from each other in potential has been marked by extreme contrasts. There have been both remarkably fertile periods of concern and action, and periods of active denial and resentment. Denial has at times given way to acceptance on the expedient grounds of national interest rather than on grounds of the democratic commitment to persons.

Throughout this history, no sense of mission has emerged and become established to encapsulate the lofty insights and passions of Leta Hollingworth of the early 1920's. Peaks in the quantity of research and publication have added little to the science developed by Lewis Terman, again in the 1920's. Despite the substantial support of private foundations and a growing federal interest in national projects and local school programs with the abler student in focus, we concentrate on acceleration in various guises, and grouping and enrichment--concepts and practices which once again take us back to the productive early history of this specific effort, and remind us all over again of pioneer programs in Cleveland and Pittsburgh and New York City. Further, those concerned with giftedness have sat essentially passive and undisturbed in the groundswell of great ideational forces like existential philosophy, phenomenological psychology and the developmental theories of Piaget and Bruner.

The present era falls heir to this scattered and inconclusive heritage, and bears the earmarks of continuation of lost opportunity. The gifted child today excites concern in thousands of individual parents and teachers, but few effective coalitions of these interests has emerged. Separate and rival professional organizations have developed, but only sporadic gestures have been made toward unification among national and state groups for the common mission of taking an effective role in shaping the policies and practices of the American school. Differential education for bright and talented youth today is existent virtually in name only, if programs and practices embody any conceptual rigor at all. It is undersold in conception by major projects, absorbed by exciting advances in general education, overshadowed by popular concerns with creativity and cultural disadvantage, and dwarfed in material support by other types of exceptionality among persons. As Dickens wrote in A Tale of Two Cities, "...it is the worst of times; it is the age of foolishness; it is the epoch of incredulity; it is the season of Darkness..."

The Function of Science and Theory in Educational Practice

With this kind of hair shirt on his back, the prophet of gloom traditionally has his ready prescription for a new and better day. And in a sense, hopefully a sense appropriately disciplined by reason and reality, the present series of papers do represent what the respective authors feel is one essential and promising avenue toward improvement of the dark course and unfulfilled history just cited. And in that the effort to form out of research, observation and reflective thought some integrated, rational or theoretical scheme that involves a certain specificity of conception, coherence in purpose, and exactness in practice comprises a rare if not unique endeavor in this field, it seems reasonable that some good at least may ensue. This, then (as Dr. J. S. Renzulli indicates is the objective of the effort in which we on this program are engaged: to bring together in an integrated pattern what science and examined experience offer to the educational practitioner, and to show how a program of differential education can be related to this embodiment of science in theory.

But "theory" has for too long been a misunderstood concept, a threat to the practitioner to whom it has greatest relevance and promise. Empirical science is generally conceded to be the ultimate taskmaster in shaping the character of action that leads toward man's ideals and aspirations. Both the quantity and increasing sophistication of educational research are distinguishing characteristics of this period of American education. But research is necessarily confined to specific bits and pieces of a whole problem. As such it is inert and sterile until it is picked up and fitted into a purposeful scheme directed toward a recognizable problem or objective in human affairs. It is this picking up and putting together of tested observations and research findings which is the function of the educational theorist. It is those theories which comprise a consistent and harmonious pattern among isolated bits of insight and information which provide a basis for further empirical research. It can be seen, thus, that scientific research _begins_ in theory; and it properly _ends_ in theory as well, in that well designed inquiries contribute toward filling in the pattern which, while whole enough at some point in time to support inquiry, remains always in need of further refinement and modification.

Theory is necessary to practice when practice is effectively geared to the achievement of specific purposes. Theory in its relevance to practice _is_ something, and it _does_ something. It is by nature an identification of salient elements and processes within a given realm of interest, and it is an organization of these elements into a functional pattern which embodies, manifests, or explains the task or phenomenon as a whole. The function of theory is to make possible a number of quite significant and desirable effects in the arena of practical action. The ideational blueprint, like that on the architect's drawing board, disciplines what is done in actual practice; it specifies the nature and purpose of various parts by revealing their place within the organized whole, and this identification encourages exactitude in action and serves further to encourage balance and comprehensiveness of function, since neglected or over attended parts of the whole are conspicuous when the whole is in clear perspective. And finally for the present, this clear and manifest relationship between part and whole provides a basis for systematic prediction of the effects of any segment of the phenomenon in focus, for pinpointing difficulties and for evaluating given elements or processes essential to the task in its ideal dimensions.

The Proposed Theory of Differential Education for the Gifted: Toward Systematic Program Development and Evaluation

This program itself, with all its concern about theory and system, is practical in nature; it is necessary to proceed to the specific practical involvements in the development of educational experience appropriately directed to the behavioral potentialities of the able learner and talented performer. So these are the questions at this point: "What is this particular theory?" "What does this particular theory do?" These questions will be answered in close conformity to the indications above concerning the respective relationships and mutual contributions of theory to science, of science to theory, and of theory to practice in human affairs in general.

First, the proposed theory of differential education for the gifted identifies salient features of the problem, these being primarily: (a) the characteristics or potentialities for experience and performance which reliably distinguish the positive deviant, and (b) the salient features of the particularized developmental experience (curricular design, supported by appropriate program organization and operation) which these distinguishing potentialities make possible and which evoke and shape them progressively toward optimal strength and approved uses. In the text of the monograph, each of these main dimensions in a two dimensional matrix are explained in the light of tested observations and research, and the relationships between adjacent or intersecting elements and processes are taken into account by way of depicting on the whole the process of human development through experience, with emphasis on superiority of potential.

A summary "Table of the Theoretical Rationale" will suffice as a reference. The ensuing papers will, whatever else their respective authors have chosen to do, refer in the respective contexts of curriculum and research and program evaluation to specific junctures in this matrix to illustrate the applications of the theory in segment after segment of a program of differential education. In view of those particular indications that are to follow, the present reference to the chart will be in the nature of an overview, a peripheral tour that prepares for but will not preempt what follows.

The title of Column 1 of the table is "Experiential and Behavioral Potentiality." In this portion of the system, a structure is provided within which all principal forms of giftedness can be accommodated and this in a manner leading into further involvements by way of educative process. In the three cells in this column (b and c being the same) three generic potentialities of the person are taken into account: (a) his possible, but not certain superiority in some degree in dynamic or temperamental traits; (b) and (c) his general intellectual superiority; and (d) his particular cognitive peaks or talents--experiential or behavioral. These elements in the theory in each instance, it is purported, respect and involve research evidence, this being perhaps most readily perceived in the generalization that specific talent is ordinarily buttressed by above average general intelligence. No attempt is made to specify in the theory how many or what kinds of specific aptitudes that are presently identifiable and amenable to school experience, but there is a locus for each and every talent so identified. The bottom cell in this column, as in the others across the table, is summary in nature, embodying in compacted phraseology all that is allowed for in the cells above.

Column 2 is virtually self explanatory, what we term "developmental objectives" being principally an indigenous transposition of what is indicated in the initial cell as potential into a phrasing suggesting what purpose in each instance resides in the educative processes geared to the particular trait pattern and leading to the product identified in column 5 . Cells 2 b and 2 c , both dependent upon general intellectual superiority, do require brief explanation, and may indeed be somewhat controversial. In the first of these, "conceptual development," the stage is set for the acquisition of information of any and all sorts; and in the second, "intellectual development," the intended meaning involves experience which by its nature tends to affect cognitive structure, or biological tissue, insofar as such basic effects are in fact possible.

Columns 3 and 4 depict, as Louise Ann Schifferli's paper indicates in

Table 1. Differential Education for the Gifted: A Table of the Theoretical Rationale (VSW, 1968)

(1) Experiential and Behavioral Potentiality	(2) Developmental Objectives	Curricular Design: Developmental Experience		(5) Goals, Outcomes: Actualized Experiential and Behavioral Potentiality
		(3) Substance: Knowledge of, about Arts and Sciences; Values; Behavioral Skills	(4) Process: Learning and Instruction	
a) Ordinary emotional response potentiality plus possible extremes in temperament, sensitivity.	Personal Development	Value information; valuational and affective situational experience and activity.	Cognitive and situational experience and guidance involving motive and emotion.	Mature, healthy personality actualized self with constructive and gratifying involvement of productive or creative disposition.
b) Superior intellective potentiality, moderate to extreme.	Conceptual Development	All knowledge and derivative activity arranged in an epistemological taxonomy.	Lifetime learning and behavioral development; Mainly personal exploration according to interest or need; instruction and social interaction only where these significantly facilitate individual learning and performance.	Understanding and skill of every nature and in whatever degree required by the actualized self for satisfying experience.
c) (Superior intellective potentiality, moderate to extreme.)	Intellectual Development	Any knowledge or activity involving these complex mental processes subject to structural or functional modification through experience.	Functional exercise, supervision and evaluation involving available intellective potentiality.	Optimally developed potentiality for general intellective operations: reflective, critical,creative.
d) Extreme superiority in localized experiential and behavioral potentiality.	Aptitude Development	Relevant technical knowledge or activity in full sublety and complexity; systematic knowledge of one or more particular fields.	Sustained, exacting experience, supervised and evaluated in light of most sophisticated developmental theory and technology.	Extraordinary understanding and skill, localized; actualized talent.
All significant, identifiable human potentialities sufficiently extreme to warrant special treatment.	Integrative development of all significant exceptional potentialities.	Every significant kind of knowledge and human activity utilized as required by and for the individual in life long personal growth and contributory social interaction.		Optimally developed, continually becoming person, free and responsible universalized human mind and character, educated for social and cultural interaction.

some detail, the nature of those developmental experiences intended to advance each particular potentiality and related objective. Column 5 depicts, in language so compact that without the text the meaning may be difficult to follow, the person developed as product out of the various lines of experience arranged throughout childhood and youth, and bearing specifically upon those experiential potentialities which he as an individual manifests.

The bottom row, as indicated a moment ago, summarizes in each respective column the aspect of education involved, and the last cell of all, bottom of column 5, is the residual point upon which all the educative forces converge. Again in overly compacted phrases, one can sense an idealized embodiment of conventional educational goals, transformed toward the distinguishing superior potentialities of the gifted person.

With this explanation in hand of what the proposed theory is comprised of, what the theory does must be depicted more briefly. It will help at this point to think in terms of phases or problems in a school program, rather than of curricular experience. By and large, it is purported that this theoretical rationale allows us to locate every significant phase of an actual program of differential education in a local school or school system, to identify by this location the nature of the operation or provision and its proper function, and through identification to shape the program, relating theory to practice, in all the dimensions suggested earlier. The existence of the explicit general system tends to direct the shaping of these respective elements into exact accord which the place in theory indicates, and to set the stage for systematic prediction and evaluation of the efficacy of any part of process within the program.

Experienced observers of functioning programs know that these usually include, or should include, a statement of philosophy and objectives, a plan for student identification and placement, a considerable amount of attention to selection and training of the teacher, and some built in device for evaluation. Both the chapters in this section of papers, and the "key features" in the evaluation system to which Renzulli's original research was addressed include treatments of all aspects of program. And in the discussions, pervasive and systematic reference to the theory will in fact fulfill the promise of those virtues indicated earlier here to reside in a practical enterprise guided at every step by theoretical rationale.

Concluding Perspective: Time for Transformation

To round out this introductory overview, let us be reminded briefly of the opening note of pessimism, of a problem area of potentially great significance stretching across a history of a half century in which behavioral sciences have marched toward maturity and a half dozen ideologies and movements and social climates have emerged and passed, a problem poorly conceived in terms of contemporary thought and badly managed in terms of contemporary practice; in short a problem area without lodging or subsistence in the world of professional education.

There may well be a dozen avenues of renewed or innovative endeavors required to rectify this discomfiting course of history; but the present effort is submitted for what it may be worth in attempting to turn the course of events. If Dicken's eloquent language may be invoked once again, then perhaps we may suggest that it is a "time for transformation" in this concern--a transformation from isolated, particular, and ad hoc conceptions to systematic, rational conceptionalization as a basis for ordering and operating developmental experience relevant to the task of evoking and directing human abilities.

PROGRAM EVALUATION IN THE PERSPECTIVE OF THEORY

by

Joseph S. Renzulli

The intention of the symposium on "Systematic Program Construction" was first to present a theory of differential education for the gifted and second, to show how selected phases of program development and evaluation are related to certain aspects of the theory.

The paper by Dr. Ward reflects his longstanding interest to fill the theoretical vacuum that exists in the area education of the gifted. His paper deals with the main dimensions of the educative process as it related to persons with extraordinary potential for learning and creativity. Dr. Ward has attempted to show the practical usefulness of theory in systematic program construction, and the consequences that usually result when programs lack the guidance that a theoretical rationale can provide.

In the paper by Miss Schifferli, selective, illustrative applications of how the theory leads to curriculum development for the gifted are presented. An attempt has been made to show how theory forces curricular comprehensiveness and calls attention to such factors as balance, focus, and distribution of the differentiated experience.

This paper discusses how a particular approach to evaluating special programs is related to the theory of differential education for the gifted (DEG).

Certain parts of the material presented in these papers are drawn from two pieces of work currently in progress. A monograph entitled, "Differential Education for the Gifted: Program Development and Evaluation," presents both the theory and practical guidelines for implementing various aspects of differential practice. The second piece of work is a revised edition of an instrument designed to evaluate programs for the gifted. The instrument is entitled "Diagnostic and Evaluative Scales for Differential Education for the Gifted" (DESDEG); and a brief description of its general nature will be reported in this paper.

Introduction

A test of the functional usefulness of any educational theory lies in the applicability of theory to the development of practical programs. Ward has proposed that the usefulness of his theoretical model is especially manifest in three significant phases of total programing for the gifted. Applications of these phases are discussed by Miss Schifferli. This paper will attempt to show the relationship between the overall theory and that segment of total programing which deals with program evaluation. More specifically, an effort will be made to point out common points of focus and demonstrations of relevance between the theory of DEG as described by Dr. Ward and the evaluative instrument, DESDEG. A description of these scales and the technique used in their development was presented at last year's CEC meeting in St. Louis and may be found in the 1967 edition of Selected Convention Papers. Also reported in the same place are descriptions and data from the initial field testing of DESDEG which was carried out in the states of New York, California, North Carolina, and Illinois. (The generally positive results of this first attempt at applying the scales to actual programs has provided much of the impetus for continued development of the DESDEG, such development hopefully leading toward a revised edition that will be made available for general use sometime in the future.)

Summary of the Nature and Development of DESDEG

Although it would be neither practical nor desirable to repeat major portions of the work to which reference has been made, the first task of showing the relationship between program evaluation and the overall theory of differential education for the gifted (DEG) requires some familiarity with a major concept underlying our evaluative scheme that was described in detail in the earlier work. This concept, referred to as the concept of "key features" holds that certain program features and characteristics are manifestly more consequential than others and that the evaluative process is facilitated when it focuses on a minimal number of highly significant program characteristics which have been designed as key features. The key features around which our evaluative instrument is structured were determined through a systematic study that involved soliciting the opinions of a panel of expert judges consisting of persons who have made outstanding contributions to the field of the gifted.

Table 1

Diagnostic and Evaluative Scales for Differential
Education for the Gifted (DESDEG)
(VSW,JSR:1967)

Key Feature A: Philosophy and Objectives

Program Requirement 1: Existence and Adequacy of a Document
Program Requirement 2: Application of the Document

Key Feature B: Student Identification and Placement

Program Requirement 3: Validity of Conception and Adequacy of Procedures
Program Requirement 4: Appropriateness of Relationship Between Capacity and Curriculum

Key Feature C: The Curriculum

Program Requirement 5: Relevance of Conception
Program Requirement 6: Comprehensiveness
Program Requirement 7: Articulation
Program Requirement 8: Adequacy of Instructional Facilities

Key Feature D: The Teacher

Program Requirement 9: Selection
Program Requirement 10: Training

Key Feature E: Program Organization and Operation

Program Requirement 11: General Staff Orientation
Program Requirement 12: Administrative Responsibility and Leadership
Program Requirement 13: Functional Adequacy of the Organization
Program Requirement 14: Financial Allocation
Program Requirement 15: Provision for Evaluation

These features listed in order of importance as determined by the panel of judges are as follows: (a) purposeful selection and systematic training of teachers, (b) a recognizably differentiated curriculum, (c) systematic procedures for the identification and placement of students, (d) a statement of philosophy reflecting a commitment to differential education and statements of particularized objectives, (e) a clearly recognizable pattern of organization and operation. This last key feature combines such elements as administrative and supervisory responsibility, financial allocation, general staff orientation and program evaluation.

Fifteen "program requirements" related to various aspects of the five key features have been structured into rating scales. The program requirements may be thought of as generic expositions of certain theoretical principles or axioms of differential education that are found in the literature and which depict ideally conceived educational practices for gifted and talented students. Each program requirement serves as a focal idea around which a set of five "scale standards" has been developed. The scale standards represent practices or provisions that are derivatives of the respective program requirements and they have been arranged according to positioned degress of quality along a five interval hierarchy. The highest scale standard represents the best practice of mature and excellent programs within the area of each program requirement; and verbal tags, Ideal, Superior, Commendable, Neutral, and Negative have been affixed to each scale standard for descriptive and communicative purposes.

The scales are intended for use by evaluators who possess certain competencies and who are not a part of the program being evaluated. That is to say, they are not primarily intended for self assessment although they may be used in this regard and as guidelines in program development. The scales are considered to be diagnostic in that they call attention to specific areas where improvement seems warranted.

Relationship Between Certain Aspects of the Theory of DEG and DESDEG

With this much orientation to the nature and development of the evaluative instrument, let us now turn our attention to some specific relationships that exist between certain aspects of the theory of DEG and certain of the scales that are included in DESDEG. At this point it should be mentioned that differences in the origin and development of the theory on one hand, and the instrument on the other hand, make for a different kind of problem than that of a straightforward application of the theory to curriculum development and the research program. The problem here is one of detecting relationships between theory and evaluative practice after the fact of independent development of the two schemes; and thus, in the discussion that follows, it will be apparent that a perfect fit between the two schemes does not exist. For this reason, only the most obvious relationships between specific scales and general aspects of the theory (as indicated by the column headings) will be discussed.

Before going on to these relationships, one overall connection that justifies the application of the theory to the DESDEG evaluative scheme should be pointed out. Ward's theory of DEG is structured around certain general elements of the educative process as they relate to individuals with extraordinary potential for learning and creativity; and these general elements (potential, purpose, process) are harmonious with the necessary and sufficient key features that were identified by the panel of expert judges, and around which the evaluative instrument has been instructed. This fact comprises one form of test for both the validity of the theory and the validity of building an evaluative instrument around selected features of programs for the gifted.

Relationships Between Theory and Instrument

The first relationship between the theory and the instrument (Table 1 of Dr. Ward's paper) deals with the experiential and behavioral potential of gifted individuals. The theory is unquestionably clear in its focus upon extreme human potentialities, and it is equally clear that the kinds of curricular experiences called for to nurture such potential are of the type that only can be managed by individuals with identifiably superior capacities for performance. Enrolling youngsters without such potential in a special program can only result in a watered down curriculum or a highly frustrating experience for the improperly placed students.

Two sets of scales in the evaluative instrument are concerned with proper identification and placement. These scales attempt to evaluate a given school system's conception of giftedness and the relationship between this conception and the instruments and techniques used to select students for the special program. For example, if a school claims to be doing something special for youngsters with outstanding creative potential, then that school should be able to demonstrate valid and reliable means for identifying such potential. In other words, it seems highly unlikely that recognizably differential experiences designed to foster creativity will fall on very fertile soil if we don't know who our most potentially creative youngsters are.

The scales that are derivatives of the key feature dealing with identification and placement also consider the frequency with which screening and placement procedures are carried out, the number of criteria used in identification, the flexibility for transfer into and out of the program, and the appropriateness of the relationship between specific aptitudes and the curriculum. Thus it can be seen that both the theory and the evaluative instrument converge on this key feature isolated by the panel of judges, and that segment of the theory dealing with potential calls attention to student identification and placement when program evaluation is in progress.

Let us now turn our attention to the second column of the DEG table in Dr. Ward's paper which depicts the main developmental objectives of the theory of DEG with respect to each of the potentialities listed in column 1. The evaluative instrument attempts to take account of this aspect of the theory through two sets of scales under the Key Feature, Philosophy and Objectives. The ratings that local school programs earn in this area depend upon how well existing documents or statements of objectives specify purposes of differential education as related to the conceptions of giftedness which the local school recognizes. In an ideal situation based on relatively complete adherence to the theory, all areas of potentiality would be acknowledged, and such acknowledgement of the respective potentialities should be reflected through counterparts in the developmental objectives column. Thus, as the theory forces consideration of all significant potentialities, the scales attempt to take account of the comprehensiveness of a program so far as the scope of objectives is concerned.

In addition to evaluating the comprehensiveness of statements in the nature of philosophy and objectives, the scales are designed to call the evaluator's attention to the distinction between the broad and specific objectives of the special program, and to distinctions that may exist between the goals of general education and those objectives that have particular relevance to furthering the development of youngsters with identifiably superior potential.

A very important interrelationship between the theory and the evaluative instrument is found in the area of curricular design (columns 3 and 4). The panel of judges that assisted in isolating the key features considered the curriculum to be the second most necessary aspect of differential education, surpassed in importance only by considerations relating to the selection and training of teachers for the gifted. The theory with which we are concerned is educationally relevant because it mainly deals with what can be accomplished, through systematic curricular experiences, to convert potential to product. Thus, it would not be inappropriate to refer to Ward's theory of DEG as a curricular theory.

Four of the evaluative scales are designed to assess the quality of experience which comprises both the content and process of the differentiated curriculum. The first set of scales in this area deals with the relevance of conception of the curriculum. A number of guidelines are provided to assist the evaluator in determining whether or not the curricular experiences are designed in essence to evoke and develop recognizably superior behavioral potentialities. An additional concern of this scale is whether or not the activities offered to gifted youngsters are conceived as a fully integrated part of the total school program, including academic credit, as opposed to a program of extra activities that must be carried out on the student's own time.

The second and third scales under curriculum are concerned with comprehensiveness and articulation. According to the theory, curricular modification should be provided for all gifted youngsters at every grade level and in all areas where giftedness is educationally significant.

With a certain amount of guidance provided by the scale dealing with comprehensiveness, it becomes the task of the evaluator to check the degree of presence or absence of developmental experience in the respective cells of columns 3 and 4. By surveying course outlines, syllabi, and other descriptive materials, by visiting a representative sample of classes, and by talking with students and teachers the evaluator may determine if, for example, the experiences for bright youngsters characteristically involve complex mental processes (3 c); or if the curriculum includes purposefully planned experiences in personal values, character, and emotional integrity (3 a, 4 a). The scale dealing with articulation seeks to determine whether or not function and structural relationships exist among the subjects and experiences of the specially constructed curriculum. This scale might focus on cell 3 b, and the evaluator may study the total curricular design of a given program to determine if the bright youngster is systematically introduced to "all knowledge" at some point in his school career.

Scale 4 in the area of curriculum deals with the adequacy of instructional facilities and materials. The relationship between this scale and the theory is quite simple. The development of certain extraordinary abilities sometimes demands facilities and equipment not ordinarily found in the regular school. Thus, tomorrow's computer scientist has to have access to machines that in most cases are reserved for Ph.D's or graduate students, and the Clarence Darrow's and F. Lee Bailey's of the next generation may need a law book or two that doesn't come in the regular Scott-Foresman order.

In conclusion, certain discrepancies that exist between the theory and the instrument need to be noted. First, the evaluative scheme does not take account of the products or outcomes of the differentiated educative process. By design, our instrument is intended to evaluate programs rather than products. A rather lengthy discussion of the rationale underlying our choice of presage rather than product variables is included in the manual of the instrument. Briefly, it is our belief that at the present time behavioral science simply has not produced a comprehensive set of valid and reliable means for measuring the kinds of products toward which the theory of DEG is directed ("the optimally developed, continually becoming person...").

Other discrepancies exist between the theory and those DESDEG scales relating to the selection and training of teachers, and to the organization and operation of the program. These may be genuine discrepancies, i.e., the theory simply does not take account of these features of a program, or it is implicit that these rather instrumental aspects of differential programs are assumeed to be present when extraordinary efforts are devoted to the development of special content and instruction. In other words, if a local school system follows the theory in developing its special program, it is quite likely that attention will be given to such features as teacher selection and training, administrative leadership, and general staff orientation.

As was indicated, we are now working concurrently on two separate but interrelated pieces of work. One is the monograph dealing with the theory of differential education for the gifted and the manifestations of theory in program development and evaluation. The second piece of work is a revision of the DESDEG scales and manual. Part of our intention in these continued efforts is to eliminate, or at least minimize, the discrepancies that presently exist between the theory and the evaluative instrument.

SYSTEMATIC APPLICATIONS OF THEORY IN CURRICULAR DEVELOPMENT

by

Louise Ann Schifferli

Introduction

The curriculum resulting from a systematic application of the theory of differential education for gifted children is derived from columns 3 and 4 on the "Table of the Theoretical Rationale (in Virgil S. Ward's paper, Differential Education for the Gifted: Theoretical Principles)." Columm 3 is concerned with the substance of the curriculum: knowledge of and about arts and sciences, values, and behavioral skills. Process (that is, learning and instruction) comprises column 4. Curricular content is dictated by the experiential or behavioral potentiality possessed by the gifted individual and the developmental objectives which follow therefrom.

Noncognitive Areas of the Personality

Looking at the first column of the table, it can be seen under a that the first characteristic of gifted children in terms of experiential and behavioral potentiality concerns the noncognitive areas of personality. The emotional and motivational attributes of the deviant child may or may not be significantly different from those of the average person. However, to whatever extent extremes in temperament or sensitivity occur, the curriculum should make provision for this deviance.

The content of the curriculum corresponding to this noncognitive area would be valuable information. Problems of conformity, purpose in life, or situational ethics seem to have special interest for the gifted student, since his heightened sensitivity in combination with superior intellectual perception leads to an ability to make much finer discrimination in terms of ethical values. Thus, for example, the gifted child can more clearly understand the idea of Bonhoeffer and others that "telling the truth" means something different according to the particular situation in which the person is functioning and the people with whom he is communicating.

In terms of process, the curriculum would be composed of cognitive and situational experience and guidance involving motive and emotion. For those endowed with superior potentiality, especially those at the very highest levels of the intelligence continuum, relationships with other people can be very difficult. Such individuals do not realize that most people are very different from themselves. They have little tolerance for those who do not comprehend or in fact are not even interested in thoughts and ideas which appear both very evident and very significant to the gifted individual. Although social justice, or the ideas of the individual's right to personal achievement and well being, as opposed to his obligation to the welfare of his fellow man, may be of grave concern to the gifted, many people of lesser intelligence are not interested in this type of problem, nor do they even conceive it as a problem. One of the goals of the curriculum, which could be accomplished in a seminar discussion, would be to have the gifted students recognize the unusual nature of their interests and understand some of the reasons for the feelings and viewpoints of others.

Superior Intellective Potentiality--Conceptual Development

The second characteristic in column 1 is superior intellective potentiality, moderate to extreme. With the developmental objective of conceptual development, the curriculum for the gifted would encompass all knowledge from an epistemological point of view, rather than the traditional substantive material usually taught to children throughout our formal education system. Epistemology, or "knowledge about knowledge" refers to the nature of a particular field and the methodology employed in its study. By the nature of a discipline is meant its history, representative ideas, illustrative problems, limits of each field, and relations between fields. For example, in regard to the natural sciences, all the areas within the field would be identified, rather than teaching as separate entities "Rocks and Minerals," "The Human Body," or "The Solar System." Earth sciences, physical sciences, and biological sciences would be differentiated and the particular studies that comprise them would be identified. Furthermore, students would consider such questions as, "What is the vocabulary of science?" "What is the nature of science?" "What is the scientific method?" and "Who are the important men of science today?"

In the study of language, rather than just adding a foreign language to the curriculum of the gifted, the more generic studies of linguistics or philology, which are fundamental to all languages, would be considered. For example, the students might study such areas of linguistics as etymology, which involves tracing words to their earliest ascertainable base in the language and establishing the group to which the words belong, or semantics, which includes the study of the evolution of the meanings of words and reasons for their survival, decay, disappearance, and occasional revival, as well as the causes of the creation of new words. Other branches of linguistics that the students might investigate are syntax, phonetics, and phonology, as well as morphology, i.e., parts of speech and the forms and formations of words--subjects which, of course, are now usually taught to most children in a dissociated fashion.

The gifted child, after learning about the general realms of all knowledge and a little about the methods of study used in each, would then be prepared to embark upon more particularized learning at any time during his life span. Independent study would be possible in accordance with personal interest or need. Formal instruction or social interaction could be sought if considered necessary or desirable for the particular subject area.

Superior Intellective Potentiality--Intellectual Development

Again referring to the charts, 1c designates the same characteristic of superior intellective potentiality, moderate to extreme, but in this case the developmental objective is intellectual development. The curriculum should consist of any knowledge or activity involving those complex mental processes which are subject to structural modification through experience, processes suggested by concepts such as strategies for learning, duetero learning, and cortical commitment. Thus the study of any subject material should involve the higher mental processes rather than being composed of simple factual statements. For example , in any type of research work, the student should attempt to distinguish facts from theory or unproven ideas. Variations in the information located should be noted and reasons for these sources. Books could be read and interpreted along with an evaluation of authoritative sources. Books could be read and interpreted on different levels of meaning; they could be evaluated according to criteria established by the students as being significant. Current political situations could be used for study in predicting the effects of various actions or developments on existing situations. Curricular process would involve such methods as seminars, debates, etc., and the writing of theoretical essays. Any type of procedure which encourages the utilization of the more complex mental processes would be appropriate.

Superior Localized Behavioral Potentiality

Finally, in the chart under 1d in the first column, extreme superiority in localized experiential and behavioral potentiality is indicated as being characteristic of gifted children. Several identifiable aptitudes could be isolated: mathematics, music, drama, dance, painting, foreign languages, and others. Taking for example the aptitude for music, curricular content would be comprised of subject matter specifically geared to the talent.

Rather than merely providing piano lessons as is often done with children possessing musical talent or even with the average child, a systematic approach would be taken to the study of the whole field of music. Technical knowledge would be considered in its full subtlety and complexity. Music history, the great composers and their works, theory, harmony, and music composition should be studied. Students should have the opportunity to play many instruments, though they may choose to devote most of their time to only one or two. Music students should also try their own music composition.

In terms of learning and instruction, study should be sustained over the entire period of schooling. Independent study would probably comprise a major portion of the work, with utilization of both school and community resources, especially in a metropolitan area. Any possible access to concerts, operas, or other musical performances could be used: live performances, television, radio, or record libraries. Some larger communities offer adult evening classes concerning such subjects as baroque instruments; these might also be available to an interested musically talented child or adolescent. Appropriate activities would include singing in small groups, or playing in bands and orchestras.

Conclusion

Considering the above points to illustrate positively how the theory contributes to a disciplined concentration on substance of experience in close harmony with (a) potential and (b) objective, it can be seen that many of the practices of school systems labeled as special education for the gifted are recognizably inadequate. Practices such as assigning additional arithmetic problems with larger numbers, or demanding that more difficult books be read; accelerating or grouping without curriculum change; or enrolling students in additional subjects, college courses, or correspondence courses at random fail to conform to specific cells (i.e. junctures within the pattern of potential against process, leading to product) and therefore do not offer differential education for the gifted.

If in devising a curriculum for gifted children, reference is made at every check point within the matrix to experiential and behaviorial potentiality, and the procedure for developing those potentialities, as has been done here, the theory forces comprehensiveness. It allows judgement to be exercised in balancing, focusing, and distributing all those efforts essential to an ideal program of differential education for the gifted.

TEACHER-PUPIL INTERACTION PATTERNS IN CLASSES FOR THE GIFTED: THE PRODUCTS OF FACILITATING VERSUS INHIBITING TEACHING PRACTICES

by

Fred K. Honigman

It is widely recognized that gifted children have a unique facility for engaging in complex, high conceptual level activities and that they tend to exhibit a great deal of intellectual curiosity, initiative, and independence in the their everyday behavior. It is also recognized that the responsibility for a systematic program for cultivating the intellectual potential of gifted children rests with the schools. Passow (1958) discusses the schools' role in the nurturance of gifted students' high level performances:

> The basic goals for the education of the gifted child is the same as that for all children...These objectives differ from those for other children only in the relatively greater emphasis placed on creative effort, intellectual initiative, critical thinking...While these same objectives are desirable for all students, they are essential for the gifted if they are to achieve maximum self-realization.

In tying these goals to teaching practices he asserts, "Methods which stress independent thinking and action, building relationships, and problem solving...are more productive than some which offer primarily rote learning and repetitive drill."

This general prescription for teaching practices is supported by Gallagher (1964):

> The program of education for gifted children should include training for autonomy and independent thinking. A program that merely calls for the dutiful collection of facts, which is all too prevalent in our educational programs, will not lead to this goal.

Throughout his book, Gallagher stresses the need for eliciting original and spontaneous contributions from gifted students. He notes that discovery requires original responses, that fluency (one of the components of creativity) is stimulated by "brainstorming," and that divergent thinking must be present for any creative functioning. Further support for this point is given by DeHaan and Havinghurst (1957), who strongly endorse the teacher's use of questions that elicit divergent responses from gifted students.

Inhibiting Instructional Practices

Although gifted children's ability to produce high conceptual level output is widely recognized, several authors have shown concern about their tendency to give mediocre intellectual performances in the presence of inhibiting influences. Both Goldberg (1958) and Strang (1958) discuss social and institutional factors which serve to inhibit gifted students' high level functioning. Gallagher (1964) talks specifically about the teacher's having either a facilitating or inhibiting influence on students' productive thinking, and offers a series of tongue in check recommendations for inhibiting the production of students' high level contributions e.g., "...Do not allow discussion or evaluative statements on the part of the students."

Namy (1967) expresses concern that elementary teachers emphasize learning activities and evaluation methods which do not require students to use higher level cognitive processes. He cites research that suggests that gifted elementary students frequently have little opportunity to utilize their intellectual potential. In addition, Roe (1960) asserts that children's investigative behavior can be inhibited by restriction, coercion, and threat.

Actual Classroom Performance of the Gifted

In the preceding section, it was mentioned that, although gifted children are perceived as having a unique talent for generating high conceptual level contributions, their actual production of this high level output may be contingent upon whether they are exposed to facilitating or inhibiting teaching practices in the classroom. The relationship between facilitating versus inhibiting teaching practices and the production of high conceptual level contributions by gifted children can be investigated systematically. Two questions have been suggested that are amenable to formal investigation:

1. Under the proper conditions (i.e., facilitating teaching practices) do gifted children actually produce more and better quality high conceptual level contributions in the classroom, and, in general, perform more independently and spontaneously than the general student population?

2. Can these children be turned off by an inhibiting teacher (i.e., be made to produce relatively low level contributions and demonstrate little

spontaneity and independence)?

To the present there are relatively little objective data about gifted students' production of high level contributions in the classroom in comparison with that produced by the general student population. Instrumentation which permits quantification of teacher and pupil behavior in the classroom on an objective basis (in comparison to rating scales or other judgmental types of data collection procedures) is a fairly recent phenomenon in educational research. To the author's knowledge, there has been only one study which has attempted to quantify the conceptual level of students' contributions in just such an objective manner, and relate these data to the conceptual level of teachers' questions. This study was conducted by Gallagher and Aschner (1963), using their own objective behavior coding system based on Guilford's structure of intellect. Gallagher and Aschner found that there was a close relationship between teachers' asking divergent questions and students' production of divergent contributions. To the present, however, this study appears to be the only one of its kind.

Harris (1960) discusses the need for more research on teaching practices for gifted children with vehemence:

> I am appalled at the dearth of data and, in the absence of such data, at the wealth of firm opinion concerning practice. In view of these circumstances I suppose we should not be surprised at the measure of emotion apparent in our discussions. I am also appalled that the data we now possess concerning the gifted youngster and the nature of the educational process are so cheerfully overlooked, or so superficially considered.

The present study represents an attempt to provide data about teaching practices for the gifted by comparing gifted children's production of high level contributions under both facilitating and inhibiting teaching practices to that produced by the general student population.

Procedure

To examine gifted children's production of high level contributions in relation to those produced by the general student population, objective data about teacher and pupil behaviors were gathered from four enrichment classes for the gifted from the Elementary and Secondary Education Act (E.S.E.A.) Title I programs in Philadelphia schools and four regular classes selected randomly from other Title I programs in the Philadelphia schools. All were intermediate elementary classes. The enrichment classes were part of the "Academically Talented--Potentially Able Student" (AT-PAS) program. The racial composition of the AT-PAS classes was approximately 50 percent Negro and 50 percent white. The children in this program were offered enrichment classes in four subject areas: science, social science, language arts, and mathematics. Participation in the program and selection of the classes was voluntary.

The classes selected to represent the general student population were taken from schools that were largely Negro in composition.

The instrument used to gather data about teacher and pupil behaviors in this study was the Multidimensional Analysis of Classroom Interaction (MACI), developed by Honigman (1967). MACI is a system of categories and related coding techniques which permits a trained observer to record and classify, in correct sequence, every behavior or event that occurs in the classroom. When organized, the resulting data reveal the actual frequency with which each category of behavior was performed during the observation period, the typical length of performance of each of these categories, and the frequency with which a sequence of any two categories occurred.

The conceptual level of students' contributions was determined by examining the relative amounts of MACI categories 1 and 2 (students' original and preestablished contributions, respectively). MACI Category 1 (students' original contributions) is roughly analagous to a combination of Gallagher and Aschner's (1963) "divergent thinking" and "evaluative thinking" categories, whereas Category 2 (students' preestablished contributions) is roughly analgous to a combination of Gallagher and Aschner's "cognitive memory" and "convergent thinking" categories.

In addition to investigating the relative amounts of these two categories of student contributions, the typical length of students' original behaviors was also examined. This was felt to be indicative of the depth and complexity of these contributions. The number of spontaneously contributed performances given by students and the number of student to student interactions recorded during each observation were also examined. These were considered to be reflective of students' spontaneity and independence in the classroom.

Each class in the study was observed twice, each time by a different observer. Each observation was approximately 45 minutes in length. Both observations for each class were combined to provide the necessary data.

Data Analysis

Because of the small sample sizes, no tests of significance were attempted. However, three groupings of classes were made, and descriptive measures for each computed. The three groupings were:

1. Gifted group with a facilitating teacher (Gifted Facilitating)

2. Gifted group with an inhibiting teacher (Gifted Inhibiting)

3. Regular classroom group (Regular).

There were three classes in the Gifted Facilitating group, one in the Gifted Inhibiting group and four in the Regular group. The determination of facilitating versus inhibiting classes was predicated on the general amount of structure imposed by the teacher on the students, particularly in terms of the kinds of questions that he asked. A teacher whose questions sought inferences, conclusions, judgments, and evaluations, was considered facilitating, whereas a teacher whose questions sought facts and information or other types of "one correct answer only" responses was considered an inhibiting teacher.

Determination of the relative amounts of Category 1 (Original) and Category 2 (Preestablished) student behavior was achieved by computing the ratio:

$$\frac{\text{Category 1}}{\text{Category 1 + Category 2}}$$

for each class. This ratio represented the proportion of all relevant cognitive student contributions that were original (i.e., high conceptual level).

The higher this ratio, the greater the relative amount of high level student contributions.

Determination of the relative length of students' high level contributions was achieved by computing a measure known as the Ratio to Category Frequency. This measure represents the number of recordings for prolonged Category 1 contributions relative to the total number of Category 1 contributions given (both long and short). The higher this ratio, the longer the typical length of students' Category 1 contributions. This is indicative of the depth and complexity of students' original contributions.

Determination of the number of spontaneously performed contributions was achieved by the formula:

$$\frac{X}{\text{Student Behavior}}$$

where X represents the number of spontaneous student contributions, and Student Behavior represents the total number of all student contributions. The higher this ratio, the greater the proportion of all student behaviors that were spontaneously performed.

Determination of the number of student to student interactions was achieved by examining the frequency of the sequence 1-X (i.e., the frequency with which a high level student contribution was followed by a spontaneously performed student contribution). The higher this number, the greater the number of student to student interactions that occurred during the observation period.

Results

The classrooms were identified by the group to which they belong: Gifted Facilitating, Gifted Inhibiting, and Regular. Table 1 shows the proportion of relevant cognitive student contributions for each group that were Original (high level).

Table 1

The Proportion of All Relevant Cognitive Student Contributions that Were "Original"

Gifted Facilitating			Gifted Inhibiting	Regular			
Group 1	Group 2	Group 3	Group 1	Group 1	Group 2	Group 3	Group 4
92.4%	53.8%	86.1%	10.0%	14.2%	10.7%	11.6%	7.0%

Clearly, the results are in the expected direction. The mean proportion of Original contributions (i.e., the proportion of relevant cognitive student contributions that are high level) was 77.4 percent for the Gifted Facilitating group, 10.0 percent for the Gifted Inhibiting class, and 10.9 percent for the Regular classroom group. The results for the Gifted Inhibiting class are obviously much more closely allied to those of the Regular group than the Gifted Facilitating group.

Table 2 presents the typical length of performance figures for the different groups for Category 1 type student behavior.

Table 2

Typical Length of Performance Figure
("Ratio to Category Frequency")
for "Original" Student Contributions

Gifted Facilitating			Gifted Inhibiting	Regular			
Group 1	Group 2	Group 3	Group 1	Group 1	Group 2	Group 3	Group 4
.34	.61	.62	.00	.48	.00	.11	.20

Again, the results are in the expected direction, but less dramatically so than for the previous measure. The mean Ratio to Category Frequency for the Gifted Facilitating group was .52, for the Gifted Inhibiting class, 0.00, and for the Regular class group, 0.20. In this measure, the least favorable findings in terms of the length (i.e., depth and complexity) of students' original contributions were in the Gifted Inhibiting group; the most favorable in the Gifted Facilitating group.

Table 3 shows the relative amount of spontaneously performed student contributions for the three groups.

Table 3

Proportion of All Student Contributions
That Were Spontaneously Performed

Gifted Facilitating			Gifted Inhibiting	Regular			
Group 1	Group 2	Group 3	Group 1	Group 1	Group 2	Group 3	Group 4
50.9%	32.3%	43.8%	9.0%	4.1%	6.9%	3.8%	6.9%

The mean proportion of all student contributions that were spontaneously performed was 42.3 percent for the Gifted Facilitating group, 9.0 percent for the Gifted Inhibiting group, and 5.4 percent for the Regular group. As in the first measure, these findings are in the expected direction. Also as in the first measure, the findings for the Gifted Inhibiting class were more closely allied to the Regular group than the Gifted Facilitating group.

Table 4 shows the number of student to student interactions in each group.

Table 4

Frequency of Student to Student Interactions

Gifted Facilitating			Gifted Inhibiting	Regular			
Group 1	Group 2	Group 3	Group 1	Group 1	Group 2	Group 3	Group 4
157	15	10	0	0	0	0	0

The variability in the Gifted Facilitating group is substantial, ranging from 10 to 157. However, even if the 157 had been simply 15, the comparison between the Gifted Facilitating group and the others would be dramatic, for there was not a single student to student interaction recorded in either the Gifted Inhibiting group or in the Regular group; the only student to student interactions produced were in the Gifted Facilitating group.

Discussion of the Results

In every measure investigated in this study, the Gifted Facilitating group showed substantial advantage over both the Gifted Inhibiting class and the Regular class group. Interestingly, the results for the Gifted Inhibiting class were more akin to those of the Regular class group than they were to the Gifted Facilitating class. Clearly, the two main assumptions discussed earlier have been borne out by the data:

1. Gifted children, in a facilitating classroom setting, produce more and better high conceptual level contributions, and perform more independently and spontaneously than the student population at large.

2. Gifted children, in an inhibiting classroom setting, can be made to produce fewer and shallower high level contributions and to demonstrate less independence and spontaneity than in a facilitating classroom setting.

The finding of a greater amount of high conceptual level performance by gifted students under facilitating teaching practices is in harmony with the Gallagher-Aschner (1963) finding that a teacher who asks divergent type questions elicits a greater amount of divergent type responses from students. In addition, there were a number of parameters of student behavior examined in this study that have not, heretofore, been investigated systematically and objectively: the length of students' high level contributions, the number of spontaneously performed contributions they gave, and the number of student to student interactions performed during the observation. In all cases, the superiority of the Gifted Facilitating group over the Gifted Inhibiting and Regular class group was quite evident. Perhaps the most dramatic of the findings, however, was the total absence of any student to student interactions in either the Gifted Inhibiting class or the Regular class group. This was more remarkable since each class was observed twice, for 45 minutes each time, and the data from both observations pooled.

The striking differences among the groups was quite notable for such a small population. However, because of the small N, these differences were not subjected to tests of significance.

Limitations, Implications and Conclusions

For a variety of reasons, it is important for this study to be regarded as a pilot study. To begin with, the lack of rigor in the sampling procedures precludes generalization of these data to the larger educational setting. In addition, the small population did not permit the data to be treated to tests of significance. The lack of rigorous criteria for identifying and selecting inhibiting teachers in advance of the study calls to question the discreetness of this classification. Furthermore, no attempt was made to relate presently quantifiable elements of teaching practices to the output measures of this study (i.e., the production of high level thinking and independent performance). Were this to be done, it would be possible to derive empirically grounded, behavioral prescriptions for facilitating type teaching of the gifted.

Nevertheless, it is felt that the data from this study (especially the strong contrast between the findings for the Gifted Facilitating and Gifted Inhibiting teachers with the same general student population) justify consideration of a more ambitious and more highly structured investigation along the same lines. This more structured investigation should, moreover, culminate in the derivation of an objective, behavioral profile of facilitating teaching practices for the gifted.

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DEVELOPING THE POTENTIAL OF THE CULTURALLY DISADVANTAGED INFANT

by

Genevieve Painter

It is generally agreed that culturally disadvantaged children are not being educated to take their places as contributing members of society. This is not only a social but a personal loss as well. Comparisons of infants from differing cultural backgrounds generally reveal no developmental differences; however, developmental deficits are well established in children from culturally disadvantaged families by the age of three (Bayley, 1965; Pasamanick and Knoblock, 1961). The precise stage during which learning experiences will be unusually effective and influential on later behavior patterns is yet to be defined; however, research suggests that the earlier intervention begins, the greater are the gains which occur (Bloom, 1964; Kirk, 1964). The question of whether or not preschool experience can help to eliminate developmental deficits is no longer seriously debated; the controversy now focuses on the defenders of the traditional or child centered nursery school program and the proponents of a structured preschool curriculum. Early reports of research projects involving curriculum innovation seem to indicate that the structured curriculum effects the more pertinent changes in the development of disadvantaged preschool children (Weikart, 1967; Karnes, Wollesheim, Stoneburner, and Hodgins, 1968).

Interest in the education of infants is increasing at a phenomenal rate. Research and service organizations are attempting to educate infants in their homes, in community centers, and in day care centers, and trying to teach groups of mothers to educate their own infants. Much has been written describing the spontaneous intellectual growth of infants (Gesell, 1940; Piaget, 1963), but little can be found concerning either efforts or theories relative to consciously sought and planned acceleration of growth. In answer to the question, "What shall we teach?", this paper presents a rationale (successfully employed in several research programs) for the structure of infant education and suggestions for appropriate activities. These suggestions can be used by professional teachers, paraprofessionals, and parents. Although the instructions are generally stated for a teacher with limited time, they can be adapted to a home setting with the mother playing her natural role as teacher. In that case, teaching sessions could be of shorter duration and repeated during the day.

The rationale must be built primarily upon studies of children of elementary school age since little is found in the literature on the acceleration of infant growth. Two major areas of emphasis in this rationale are language development and conceptual development because culturally disadvantaged children have generally been found to perform at a lower level than their advantaged peers in these areas. A third area, sensory motor training, is effective as a training technique. Culturally disadvantaged infants are not usually found to be deficient in motor development; however, since infants learn through sensory input, teaching should utilize sensory motor training to facilitate the development of concepts and language. Visual, auditory, tactual, kinesthetic, olfactory, and gustatory modalities should be stressed independently and in combinations in various activities. The infants should be encouraged to give both verbal and motor responses. An appropriate age for the initiation of this type of intervention is between ten and twelve months; earlier training is not considered in this discussion because of the absence of speech development.

Rationale for Language Training

Bereiter and Engelmann (1966) postulate that the disadvantaged child master a language that is adequate to meet his social and material needs, but that is not adequate to transmit information and to carry on verbal reasoning. Deutsch (1964) suggests that a "cumulative deficit phenomenon" occurs in the area of language development between the first and the fifth grade years in the disadvantaged child and that such a phenomenon seems to be more pronounced for Negro children. Even extremely young children, ages 18 to 30 months, differ in number of sound types produced. Children in higher socioeconomic groups produced a greater number of differing sounds and added new sounds at a higher rate (Irwin, 1948 a and b). Spicker, Hodges, and McCandless (1966), observed language behavior as one of the most serious and pervasive psychoeducational disabilities among the preschool and kindergarten children in their study. The majority of the children were able to communicate their needs and to carry out simple verbal instructions, but many displayed gross inability to cope with elaborative language. Karnes, Wollersheim, Stoneburner, and Hodgins (1968) also report communication and psycholinguistic problems in the disadvantaged preschool children in their study.

Controlling one's actions through one's own words is a necessary step toward the mastery of dialectical reasoning (Luria, 1961; Vygotsky, 1962). Bereiter and Engelmann (1966) point out that information may be accumulated and used by controlling verbal behavior through an "internal dialogue" which differs from the social uses of language and may be the very core of verbal intelligence. They postulate that culturally disadvantaged children lack the most rudimentary forms of constructive dialogue and are therefore cut down at the basis of academic aptitude, the ability to have internal control of language to maneuver the sequential steps necessary for problem solving.

Suggestions for Language Training

Language development should be encouraged in all play activities. When the infant is given manipulative materials, the teacher should emphasize appropriate words or sounds as well as those which evolve naturally during the teaching session. For example, if plans are made to play with a ball, the teacher should plan to use sounds and words which she knows the infant might be able to imitate such as, "whee," "zoom," "ball," "roll." In addition, when the infant is actually playing, those sounds which evolve naturally such as "oh, oh," should be said by the teacher with the hope that the infant will imitate. The tutor should imitate the infant's speech in order to set a pattern of imitation as fun and play.

In addition to the encouragement of speech in all activities, the following structured language program is suggested: (a) beginning language, (b) elaborative language, (c) the breaking down of "giant word units," and (d) the encouragement of internal dialogue. Each child's language program should be initiated at his own level of development. It is suggested that the teacher sample tasks at each level with the child and begin training at the point where he is unable to perform. The nonverbal child, of course, would be encouraged to imitate babbling.

Beginning language may be taught as follows:

1. The infant who does little babbling or who speaks few words should be taught to imitate the teacher's vocal sounds. Imitate the sounds the infant produces spontaneously, making it seem like a game which is fun to play so that the infant will again make the sound. Then, say a new sound trying to initiate imitation on the part of the infant.

2. Show the infant objects found in his environment and encourage him to repeat their names.

3. Show the infant pictures in a book and ask him to point to various items, e.g., "Where is the dog?"

4. Ask him to say the name of a pictured object, e.g., "What is this?"

5. Tell the infant to demonstrate the use of a pictured object, e.g., "What do we do with a spoon? Show me."

6. When an infant is able to talk, discourage gestures or grunting by telling him how to ask for an item. Do not give it to him unless he says the word or words. If he is able to say "wah wah" for water this should be accepted, but when is able to say "water" he should be expected to say it precisely. Still, when he is able to combine words, he should be told to say, "I want water."

7. Although the infant should be shown what to do through teacher demonstrations, he should also be expected to follow verbal instructions, such as, "Put the toy back in the box."

Elaborative Language should also be encouraged. Dramatic play, rhymes, and songs should be used to develop the extension and spontaneity of speech. Adjectives and adverbs should be used and the child should repeat, e.g., "This is a *blue* car. The car goes *fast*." Objects, paper doll cut outs, and parts of the body may be used to teach prepositions, e.g., "Put the penny *in* your hand, *under* your feet, *between* the mother and father doll." Many teaching devices can be used to teach antonyms, e.g., "warm cold" milk, "opened closed" box, "long short" pretzel sticks.

The breaking down of "giant word units" as suggested by Bereiter and Engelmann (1966) should be encouraged. The child who says, "Tha ha" should be encouraged to say "That hat," or "That is a hat" depending upon his level of speech development.

Internal dialogue should be encouraged. Manipulative activities which require time to observe a problem and to plan for a solution should be verbalized for the child. Encourage the child to repeat this dialogue, then to whisper it, and then to say it silent while working. For example, in working a puzzle, tell the child, "We start at the head; turn the piece around until it will fit." As he repeats the manipulation, he should be told to whisper the pattern and then to say it to himself.

Rationale for Conceptual Training

Research has emphasized the relationship between language and conceptual development. Concept formation apparently does not await the learning of names or labels, and language development serves to facilitate a process already begun on the nonsymbolic level. Yet the power of language in advancing conceptualization cannot be minimized. Providing a name or nonsense syllable for a number of objects will increase a child's tendency to respond similarly to each of the objects; conversely, providing different labels for different objects will increase the tendency to respond variously (Spiker, 1956). Representation by a language symbol constitutes the final step in concept formation. Rudimentary concept formation takes place at the prelinguistic level but is limited to relatively concrete situations. The process of generalization is facilitated if a concept can be subsumed under a verbal symbol (Ausubel, 1958). Prehm (1965) found that verbal pretraining had a significantly positive effect on the conceptual performance of culturally disadvantaged children and that the use of verbal labels may have made the visual stimuli which he used more meaningful. He suggests that these children be given increased language experience in the preschool years, especially practice in the use of verbal cues in the solution of problems.

Martin and Stendler (1959) write that formal education is largely a process of teaching concepts. It is presumed that the conceptual process involves both the differentiation of impressions which are originally diffuse and the integration of impressions which are originally detailed and fragmentary. Abstraction, discrimination, and generalization are utilized at all age levels. Older children and adults arrive at concepts both inductively, from the particular to the general, and deductively, from the general to the particular. These authors state that we know the conceptual abilities of children at various age levels but do not have an adequate understanding of the process by which young children acquire concepts or of the contributions of adults to facilitate that process.

The differentiation between language growth and conceptual growth in an individual is only theoretical since they are combined in the spontaneous development of the child. However, they may be considered somewhat independently in the construction of an educational program for infants. Five concepts which are considered to be prerequisites for academic learning and which are usually acquired at an early age are suggested: (a) the concept of body image, (b) the concept of spatial relationships, (c) the concept of number, (d) the concept of time, and (e) the concept of categorical classification.

Suggestions for Conceptual Training

Concept of Body Image. In his discussion of perceptual motor spatial integration Kephart (1960) states that spatial relations and spatial directions develop first in relation to the child himself; only later are objective relations developed between objects. He suggests, therefore, that the child must develop a concept of body image, a clear picture of how he relates to space. The following are suggestions for helping an infant develop the concept of body image. Place a mirror in front of the infant. Allow him to name the parts of the body. Say, "What is this?" (pointing to hair). If he is nonverbal, say, "Show me your eyes." Tell him to point to or name the parts of the body on a doll and then on himself. Place the infant's hand or foot on paper or have him lie down on a large piece of paper; draw an outline of him with a felt tip pen.

Concept of Spatial Relationships. Piaget (1963) theorizes that the infant's earliest ideas of space depend upon where the child is at a certain point. A series of developmental stages follow in which he learns to comprehend a single objective space, encompassing objects and persons. As the child develops his concept of space, he learns to differentiate not only spaces but objects in them by their form. Ausubel (1958) writes that form discrimination is one of the earliest conceptual acquisitions of the child.

Size discrimination requires the relating of an object to other measures or objects and develops later.

Included in the concept of space are activities for the development of form perception, size perception, spatial relationships and seriation.

1. Train the infant to perceive the form of an object by having him place forms (cylinders, cubes, triangles) in their corresponding holes in the top of a form box. Teach him to draw geometric figures by using templates and encouraging free hand drawings.

2. Teach size perception by showing the infant how to place rings graduated in size on a pyramid shaped structure, the largest fitting at the base. Use large and small cookies, cereal pieces, and cardboard shapes (all of the same color to avoid confusion) to teach size.

3. Use nested cubes, poker chip designs, and puzzles to teach the amount of space necessary for placing objects, spatial relationships between objects, and position in space.

4. Use nested cans and boxes to teach seriation of objects.

Concept of Number. Piaget (1952) writes that ordination and cardination first occur at a global level and are dominated by immediate perceptual experience. The first percepts of number probably involve one in contrast to more than one, i.e., the child develops a percept of many before he begins to develop definite concepts of numbers. Counting is often learned on a rote basis prior to the acquisition of functional number concepts and cannot be considered a product of conceptual development (Ausubel, 1958).

The following activities are suggested to teach the initial stages of number concepts:

1. To differentiate "one" from "many" or "more," place pennies or cereal bits in front of the infant. Ask him for "one" and then for "more" or "many pennies." Show him how to do it by giving him the pennies or cereal pieces first.

2. To teach the concept of oneness, give the infant one penny in his own cup and one in yours; continue to alternate placement until all are placed; allow the infant to dole out the pennies.

3. Demonstrate the concept of twoness by holding two pennies in your hand and placing them in a small box; have the child imitate the procedure. Three to five boxes and six to ten pennies may be used. Tell the infant, "Make two in your hand and then put the two in a box; good, now make two again and put them in this box."

4. Teach the child to count to ten by rote. Of course, this will not teach him number concepts, but it will make him familiar with the words we use and their progression.

Concept of Time. Piaget (1952) postulates the following stages in the infant's experience of temporal happenings:

1. The child participates in a series of temporal events such as hearing a sound and then turning his head to find the source. The child may experience a vague feeling of duration intermixed with other vague

sensations of effort, need, and the like.

2. The child may then have some elementary consciousness of before and after in an action result sequence, such as pulling a string to activate an object.

3. The ability of the child to retain a series of events in which his own action did not directly intervene is a next stage in the experience of temporal happenings. In this case the child recalls an event rather than a past action. For example, the child searches behind a screen to find an object he has seen the experimenter hide there.

4. A further development in temporal awareness is demonstrated when the child is able to recall the events of a more remote past happening, such as remembering that mother put a toy on a particular shelf two days ago. (When the child is asked where the truck is, he points to the shelf.)

Temporal awareness should be stressed throughout the day as a part of the natural sequence of events: (a) The teaching session should follow an orderly progression. Tell the infant, "juice time," "puzzle time," "painting time," "time for teacher to go home" or "time to put away the toys." (b) Point out daytime, morning, breakfast time, lunch time, dinner time, sleeping time. (d) Tell the infant, "I'll see you tomorrow." "When I was here yesterday you showed me your cat." "Today we'll paint."

Concept of Categorical Classification. Ausubel (1958) states that concept formation consists of a process of abstracting the essential common features of a class of objects from a series of situations in which they vary contextually in unessential details, or along dimensions other than the particular ones under scrutiny. The common features are comparable configurations or sets of relationships. The young child classifies experiences in terms of immediately perceived properties rather than in terms of their class membership. Later, however, categorical classification tends to become the dominant mode of organizing experience. Ordering of experiences and segmenting them into manageable categories is a necessary component of cognitive development and is a prerequisite to academic readiness.

Classification concepts (the ordering of objects and placing them into meaningful categories) may be taught in a variety of activities:

1. Place three of four pictures, all alike but one, on the table in front of the infant. Tell him, "Give me the one that is different," or "Give me the one that doesn't belong there."

2. Place three of four different pictures in front of the infant and say, "Give me the one that is the same as this one in my hand."

3. Cut pictures from magazines. Teach the infant to sort pictures into categories. People, foods, dogs, cats, and birds are easily identified by an infant. Use two categories at first, then three. Tell the infant, "Put all the dogs in the dog house and all the people in the people's house." (Boxes labeled with a picture of a dog and a person represent the houses.)

4. Teach the child to sort chips, blocks, and the like into color categories. Use primary colors first.

This rationale emphasized the use of sensory motor materials in a way which would help to promote the language and conceptual development of very young children. The areas chosen as the basis for this structured program of infant education reflect the areas in which disadvantaged children generally perform at a lower level than their advantaged peers. Their general area of strength, motor development, has been used as the most effective mode of presentation. Emerging speech and fine motor skills may be combined to enhance the conceptual development of young children if the activities are presented in a manner which is fun for the teacher or mother as teacher, and the infant. Infant teaching can be a satisfying experience for both teacher and infant and can do much to avert the deficits which disadvantaged children begin to reflect at about the age of three.

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ABSTRACT

THE GIFTED CHILD WITH SPECIFIC LEARNING DISABILITIES

by

Edward C. Frierson

The concept of "multiple exceptionality" is developed systematically in this presentation along with the important perspective that exceptional learning needs cannot be understood in terms of test scores alone. Attention is called to those children who possess unusual learning abilities and unusual learning disabilities. The abilities and disabilities are described and practical teaching procedures are discussed.

Five short sections are included in this paper, each of which is different yet complementary. First, through the technique of biographical analysis, several gifted men are shown to have been children with "specific learning disabilities." Many famous leaders of the past are revealed as having had behavior disorders, physical infirmities and sensory handicaps. Less publicized, yet just as debilitating, the specific reading and language disabilities of eminent leaders--and criminals--are described.

The second part of this presentation reviews the professional literature describing the cognitive abilities profiles of gifted children, retarded children and bright children with specific learning disabilities. Several significant conclusions emerge from this review.

Following the summary of literature, a study of the selection practices for gifted classes in a large metropolitan community is analyzed. Particular emphasis is given to the performance of children nominated but rejected for special class placement. Scores from achievement tests, "WISC's," "Bender and other measures are presented in support of the contention that some "gifted" children are not producing due to subtle and not so subtle learning impairments.

The fourth aspect of the paper is an educator's interpretation of several exceptional abilities and disabilities as they affect classroom performance. The learning characteristics of children with high general verbal ability and the characteristics of children with perceptual handicaps are demonstrated. Several examples are presented in which both patterns are present in the same child. As a result, educational problems of children possessing both unusual learning abilities and disabilities are delineated clearly.

The final portion of the presentation outlines the teaching strategies which are indicated when high verbal abilities are linked with perceptual disabilities. Materials and procedures found to be effective in selected tutoring situations are described. The limitations of empirical studies comparing groups are introduced. However, teachers are encouraged to adopt a behavioral science point of view in dealing with individual students.

In summary, the presentation emphasis the importance of knowing

1. What kinds of leaders gifted children with learning disabilities might become

2. What the literature reveals about the cognitive abilities of different groups of exceptional children

3. What school systems know and can predict about students with unusual abilities and disabilities

4. What abilities and disabilities mean to the classroom teacher

5. What teaching materials and procedures have been demonstrated to be effective with bright learners who have perceptual problems.

The paper demonstrates what the author means by the statement: "Every interaction of teacher and student is a test of the null hypothesis.

ABSTRACT

THE DISADVANTAGED GIFTED CHILD

by

William J. Tisdall

Research evidence and classroom observations indicate that devaluation of education is prevalent among children from economically and culturally disadvantaged backgrounds. Impairment of learning styles and motivations may be a common result of these environmental circumstances. Gifted pupils from this segment of the population tend to underachieve and display lowered levels of aspiration which are inconsistent with their otherwise high academic potential. A special school has been established in Kentucky as a new approach to the education of these children and as a setting for research related to their peculiar learning problems.

The Lincoln School is a residential high school operated by The University of Kentucky College of Education. It is coeducational, nongraded, and has a full academic year program. Sixty pupils are enrolled in the first class. A new freshman class will be admitted for each of three additional years until a total student body of 240 is in residence. Public school districts throughout the State participate in the nomination and selection of pupils.

Curriculum is determined by the academic needs and abilities of individual students. Curricular innovations are studied in conjunction with an ongoing research program. Other investigations related to motivation, social values, aptitudes, intelligence, self concept, and school achievement are either planned or underway. Preliminary data show promise for success in realizing both training and research objectives.

ABSTRACT

PATTERNS OF RESEARCH ON THE GIFTED

by

Marvin J. Gold

Recent research efforts in the area of the gifted can be summed up by noting that the major emphases have been investigations into (a) characteristics of gifted individuals, and (b) creativity.

Conclusions of recent research activities in the first area, characteristics of gifted individuals, are far from unique. There is an overwhelming body of often replicated work produced by researchers who have engaged in redundant research. There are areas of concern that need to be left alone unless they are looked at from a different vantage point or considered with a new factor added.

The surface of the second research push, creativity, has hardly been

scratched. The researcher is working in an area so new and so in need of refinement that replication is necessary. Examples of areas where a repetition of activities is desired include characteristics of creative individuals, the relationship of creativity and intelligence, and personal adjustment of highly creative individuals.

Between the work on characteristics and creativity a fairly large body of knowledge is accumulating. In characteristics it is a vertical expansion; in creativity it is both horizontal and vertical.

There are hints of greater potential to be found in recent research on the gifted. Among research activities that indicate a need for further research are those concerning curriculum, cross cultural studies, comparisons of gifted subgroups, and comparisons of different styles of performance among the gifted.

ABSTRACT

SPECIAL EDUCATION FOR THE GIFTED THROUGH TELEVISION

by

Mary M. Pilch

This is a federally funded project under Title III of P.L. 89-10, Elementary and Secondary Act of 1965, Project No. 67-03260-0. It was started July 1, 1967; the pilot area involves 39 school districts in northeastern Minnesota. 1968-69, the second year of the pilot phase, includes 125 individual schools and approximately 1600 identified and selected gifted students in grades five through seven. It is planned to extend the project throughout the State of Minnesota in 1969-70 should funds be available.

The purpose of the project is to implement an exemplary educational program for gifted elementary and junior high school students and their teachers by using a unique combination of new and different content materials combined with especially developed instructional strategies disseminated via television. It is anticipated that this innovative procedure will help facilitate the development of the skills for using the higher thought processes essential to the kind of productive thinking gifted students are capable of achieving.

The project develops a linked series of television programs which involve the use of selective films combined with original videotapes developed by the project staff. A weekly series of three half hour programs is scheduled during the school day. During 1967-68, thirty-six half hour programs were telecast for 12 weeks. In 1968-69, fifty-four half hour programs will be telecast for 18 weeks. During each weekly series students and teachers will view the following:

1. A "Content" film containing new and unique information not generally found in the conventional curriculum but directly related to the theme of the year's work. This will be the substantive vehicle from which the second series will draw material for demonstrating a classroom strategy emphasizing process.

2. A "Process" videotape developed by staff Master Teachers demonstrating the skills and strategies involved in the higher thought processes of productive thinking. No attempt is made to instruct for knowledge input. Strategies are used to illustrate a variety of ways possible to nurture the creative potential of these students. Interaction with the television teacher is encouraged.

3. An "In Service" videotape developed by the staff Master Teachers to explain the theory of learning demonstrated in the "Process" tape and how it can be implemented in the classroom in any of the regular subject areas. The students and teachers view both the "Content" and "Process" series; only teachers view the "In Service" series.

A syllabus containing objectives, vocabulary lists, bibliographies, and summaries of the content in all fifty-four programs (1968-69) will be distributed to all teachers involved.

Identification and selection of giftedness must be concerned with many kinds of talent at varying degrees of excellence. The project accepts this multidimensional concept and pursues a selective process composed of the following three phases:

1. Phase one identifies all children who score one standard deviation above the national mean as determined by the group intelligence tests administered in the local schools.

2. Phase two is the teacher observation and selection phase. The roster of student names provided in Phase one is used to process the second phase. Selection is based on a list of characteristics and traits associated with giftedness exclusive of those measured by an intelligence test. Each trait is carefully defined by the project and teachers rate each child on each trait. Teachers make a final selection in the Phase two process by selecting a minimum of ten percent but no more than twenty percent of the names on the original roster.

3. Phase three is the abilities testing phase. It is concerned with selection of giftedness in terms of thinking capacities, leadership, creativity, and personality. Those chosen in phase two will be administered specially selected tests measuring abilities in critical thinking, productive thinking and creativity. Final selection for field study and individual analysis will be made from this third phase process.

Pretesting and posttesting processes have been implemented. Separate questionnaires to students, teachers and administrators have been constructed and disseminated to get subjective evidence on opinions and reactions to the first year's programs. Ninety percent of these were completed and returned. Finally, staff members visited about fifty schools to get first hand comments and reactions to identification techniques, communication problems, and feedback and follow through needs. All these findings on the first year's activities will be summarized and reported as the evaluation phase of the project. The same processes will again be used during the year 1968-69.

Inservice activities using regional workshops, seminars, faculty meetings and institutes are part of the project's total effort. These occur before, during, and after the television schedule. Consulting services by staff members are available at all times. A mobile library of exemplary basic reference for gifted students is on loan throughout the year. Bibliographies, work study papers, and a professional library of reading materials on the gifted are also available and in use. The videotapes produced by the project are catalogued and can be taken out on loan.

Detailed information can be obtained from the Project Director,
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ABSTRACT

A REPORT ON A STUDY OF EDUCATIONAL PROGRAMS FOR GIFTED CHILDREN IN SELECTED ELEMENTARY SCHOOLS IN THE UNITED STATES

by

William G. Melville

In 1965, in cooperation with Dr. Russell I. Hammond, Director of the Research Department in the College of Education at the University of Wyoming, and with the support of the American Association for Gifted Children, Incorporated, a nation wide study of educational programs for gifted children in selected elementary schools was initiated. The purpose of this study was to investigate and report on the education of gifted children in the elementary school by answering these questions: What is being done in the regular and special classrooms for gifted children? How is it being done? On what principles should a program for the gifted be planned?

Questionnaires were sent to representatives of state departments of education, state education associations, colleges and universities, and school systems. Of 293 persons asked to participate, slightly less than 75 percent or 213, responded. All respondents were asked to evaluate a list of 25 principles for setting up and evaluating programs for gifted children in the elementary tary school. Persons involved in the actual process of educating gifted children were asked to evaluate their programs according to the list of 25 principles and to answer questions concerning the actual operation and organization of their classes.

The five highest rated principles were:

1. The Principle of Social Orientation of Education
2. The Principle of the Guided Approach to Teaching
3. The Principle of Experimental Approach to Providing for the Gifted
4. The Principle of Adequate Stimulation
5. The Principle That the Education of the Gifted Child Should Emphasize Enduring Methods and Sources of Learning, as Opposed to A Terminal Emphasis Upon Present States of Knowledge.

The top five principles being implemented most effectively according to the respondent's ratings of their own programs were:

1. The Principle of the Experimental Approach to Providing for the Gifted

2. The Principle of Enrichment As A Qualitative Rather Than A Quantitative Concept
3. The Principle of Social Orientation of Education
4. The Principle of Adequate Stimulation
5. The Principle That in the Education of the Gifted Individual There Should Be Considerable Emphasis Upon Intellectual Activity.

In the findings of the survey of ongoing programs, some of the interesting points were:

1. More gifted children were identified in the third grade than at any other level.
2. The first grade was the level at which special provision for the gifted was most generally initiated.
3. Mathematics was the subject most widely taught in special classes.
4. Critical thinking was the main objective of most of the programs.
5. Teacher observation was the most widely used measure of objectives.
6. Curriculum provision for children in kindergarten through third grade was in ungraded classes.
7. Curriculum provision in grades four through six was through offering subjects beyond grade level.
8. Almost half the programs were not evaluated.
9. Most programs had been initiated since 1957.
10. The best teachers available were selected to teach special classes, but only seven respondents replied that their teachers were certified to teach gifted children.
11. Evaluation was the greatest problem area.

BEHAVIORAL DISORDERS

AGGRESSION AS AN INDICATOR OF OUTCOME--IS IT ALWAYS A BAD SIGN?

by

Herbert Grossman

Introduction

There is no clear cut evidence that the more aggressive or antisocial emotionally disturbed children are less amenable to rehabilitative efforts. Yet decisions about the rehabilitation of disturbed and delinquent children and youth are influenced by their aggressive behavior patterns. Even in experimental programs, such placement decisions as whether children will be offered services in the community or removed from the community and whether they require a maximum security setting or an open setting are influenced by the frequency and severity of their aggression (Grossman and Fishel, 1966; Warren and Kleine, 1963).

In addition, because of the lack of information concerning the prognostic significance of aggression, the reactions of those involved in rehabilitation to the aggressive behavior manifested by emotionally disturbed children whom they are rehabilitating are necessarily based on considerations other than its prognostic significance. Papanek (1965) underscores this problem in his statements about the management of aggressive behavior.

> Concepts of management--such as they are--are still too often conventional. Even where new concepts are adopted, they rely heavily upon basic philosophical ideas and practical considerations other than those of treatment: for instance, the need to protect society against offenders, the hope of deterring other potential delinquents, etc. These other considerations--important as they are for other reasons--may actually conflict with the interest of successful treatment (p. 210).

The recent growth of programs which stress behavior modification through the application of principles of operant conditioning (Whelan, 1966; Ullman and Krasner, 1965) and programs which attempt to rehabilitate emotionally disturbed children by the application of educational methods (Morse, Cutler and Fink, 1964) make Papanek's concern even more salient because these programs usually consider the reduction of aggression as an important goal for disturbed children in general.

What does the literature indicate about the prognostic significance of aggression?

Undifferentiated Aggression

One way of studying the relationships between aggression and post rehabilitation outcome is to equate all forms of aggression disregarding differences among its many manifestations. Studies which have related aggression to outcome have usually included subjects who were considered either emotionally disturbed or offenders, but not both. This reflects the courts' tendency to provide different institutional and rehabilitative modalities for these two groups and reflects also the position of many writers who have differentiated these groups for theoretical reasons (Bennett, 1960; Deutch, 1966; and Lidz, 1966).

Offenders

Research about the relationship between aggression and outcome for offenders supports the long held belief that aggressive behavior directed against others in the history of criminals and delinquents is a poor prognostic sign. In the followup study of criminal offenders, Gibbens, Pond and Stafford-Clark (1959) found that aggressive criminals had a significantly higher rate of recividism than nonaggressive ones. They reported that unlike nonaggressive criminals, aggressive criminals offended again almost without exception. Stott (1964) noted a difference in the behavior of delinquents on parole which was related to their previous school behavior. Parolees who had been characterized by hostility towards or rejection of adults in school committed more offenses while on parole than parolees who had not been hostile or rejecting to adults in school.

The reviewer did not locate research relating aggressive behavior during rehabilitation to outcome for criminal offenders.

Emotionally Disturbed

Studies of the relationship between aggression and the post rehabilitation outcomes of the emotionally disturbed have been less consistent than studies dealing with offenders. The inconsistency is due to difference between the results obtained when emotionally disturbed subjects with different types of diagnosis were studied together and when subjects diagnosed as schizophrenics were studied separately.

Research which has included a total population has uniformly indicated that prerehabilitation aggression is a poor prognostic sign. Feldman, Pascal and Swensen (1954) found that subjects who tended to direct blame or hostility exclusively on the environment had a poor prognosis for status one year after discharge from a mental hospital. Robins and O'Neal (1958) in a 30 year followup study of persons who had been patients in a child guidance clinic noted that youngsters who had acted out against others committed significantly more offenses in later years than children who had not.

In a study of referred and evaluated, but nontreated nonpsychotic preschool children in a child guidance clinic, Reiser (1966) observed that children who had been aggressive during their preschool years tended to commit more delinquent offenses as teenagers than children who had not been aggressive in their preschool years. Roff (1961, 1963) studied the relationship between peer relationships in childhood and adjustment in the armed forces, using as subjects children who had been treated in child guidance clinics. He found that those subjects who had acted in a mean, abusive, antagonistic, or dominating manner toward their peers tended to have more less than honorable discharges from military service than children who had had satisfactory peer adjustments.

Research which has used schizophrenic rather than undifferentiated emotionally disturbed subjects has consistently indicated that prerehabilitation aggressive behavior is a good prognostic sign. Schefield, Hathaway, Hastings, and Bell (1956) and Simon and Wirt (1961) reported that poor school deportment is related to good adjustment for schizophrenics. Nameche, Waring, and Ricks (1964) found that schizophrenic patients who had acted out in the community tended to be the less chronic patients. Grossman (1967) reported that schizophrenic boys who had been aggressive before being placed in a residential treatment center tended to have better outcomes as young adults than did less aggressive schizophrenics.

But, although there is a consistent relationship between prehabilitation aggression and good outcome for schizophrenics, no such consistent relationship has been observed for aggressive behavior which occurs during the rehabilitative process and outcome. McKeever and May (1964) found that schizophrenics who were less cooperative during their hospitalization tended to be released earlier. However, Albee (1950) reported that more aggressive schizophrenics tended to remain hospitalized for longer periods of time and Marks, Stauffacher, and Lyle (1963) found that uncooperative schizophrenic patients tended to be rehospitalized following discharge. Finally Walker and Kelley (1960) found no relationship between patients' hostile behavior while they were hospitalized and either early discharge or symptom improvement.

The finding that aggressive behavior is a favorable prognostic indicator for schizophrenic patients can be derived from the distinctions made by Mahler, Furer, and Settlage (1959). They distinguished between the most severely disturbed, autistic psychotic children who had never established emotional relationships with others even in the earliest stages of their lives and the somewhat less severely disturbed psychotic children who struggled to maintain interpersonal contact in whatever way possible because they had experienced satisfactory relationships during their earliest years.

Differentiated Aggression

Locus of Aggression

Nameche, Waring, and Ricks (1964) and Grossman (1967) reported that although aggression in an undifferentiated sense was a positive prognostic sign for schizophrenics, those who had acted aggressively in the community had a significantly better prognosis than those who aggressive behavior had been confined within the family. One possible explanation for this finding is that aggression which occurs in the community may be indicative of more pervasive, less stimulus specific behavior than aggression in the home. Another possible explanation is that the prognostic significance of aggressive behavior may be dependent on such variables as the persons toward whom it is directed. Some support for the second alternative is Grossman's (1967) finding that aggression in the home was a positive prognostic indicator and aggression in the community was a negative prognostic sign for neurotic boys who had been institutionalized in a residential treatment center.

Impulsivity

Lander and Schulman (1963) report that adolescent boys who had committed unplanned impulsive murders tended to achieve a satisfactory adjustment following residential treatment. They suggest that "acting out" occurs along a spectrum which includes impulsive behavior and shrewdly planned behavior and which has prognostic significance. Arieti (1955) observed that a stormy premorbid personality characterized by sudden violent and drastic changes in attitude and behavior was a good prognostic sign for schizophrenic patients. Grossman (1967) found that schozophrenics who had manifested consistent patterns of impulsive eruptive aggressive behavior had better post rehabilitation outcomes than those whose aggression fit a quiet continued pattern.

Severity of Aggression

Stott (1964) in his followup study of boys on probation found that those boys who had been more seriously aggressive toward adults in school tended to fail probation more often. Black and Glick (1950) reported that the more serious the aggression for which delinquents had been committed to a residential treatment center the poorer was their prognosis. However, when Grossman (1967) grouped students in the same treatment center in terms of their diagnosis, he found that more severe aggression was a positive prognostic sign for schizophrenics.

What conclusions can be drawn from this review of research? When all of the above results are considered together they indicate the following:

1. Prerehabilitation aggressive behavior is a poor prognostic sign for undifferentiated populations of offenders or emotionally disturbed persons.

2. Prerehabilitative aggressive behavior is a good prognostic sign for persons who have been diagnosed schizophrenic.

3. Such variables as whether the aggression occurred at home or in the community, whether it was impulsive eruptive or quiet continued, and whether it was severe or mild influence the relationship between aggression and outcome.

4. There is little evidence for drawing any conclusions about a possible relationship between aggressive behavior which occurs during rehabilitation and postrehabilitation outcome.

What are the implications of this review of research? These findings certainly do not suggest that the emotionally disturbed students in our schools and treatment centers should be encouraged to be aggressive. In fact, there is little evidence available about the relationship between aggression during rehabilitation and outcome. Even for schizophrenics the results are inconclusive. What they do suggest is that aggressive behavior does not mean the same thing for all emotionally disturbed people. More importantly, they indicate that rehabilitators, whatever their profession, need to consider very carefully whether any particular way of managing aggression is appropriate for all emotionally disturbed students.

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ABSTRACT

PROBLEMS AND ISSUES IN EDUCATING THE JUVENILE OFFENDER

by

Garland Wollard

Correctional educators are coming out of the dark ages by virtue of increased interest in correctional education on the part of the Federal government, colleges and universities, and private research foundations.

To date, there is no extensive research which measures the effectiveness of education or training in the correction of an offender. One can only assume that an offender will have to earn a living when released from prison, that he must have a full time job that pays well enough to satisfy his basic needs, and that released offenders have sufficient intelligence and ability to cope with the demands of society.

Juvenile offenders suffer the most from incarceration. Employers will not place them in jobs commensurate to their training or ability. They are often forced to overcome a negative attitude about themselves with little encouragement from their peers or society.

For every juvenile in prison, there are 1,000 equal counterparts who are not in prison. Training and education for the juvenile delinquent is meaningless if he cannot get a job or attain a high school equivalency certificate.

These problems can be lessened if labor, industrial, and governmental leaders will work in close conjunction with correctional personnel, the courts,

and the educators. Education and training alone cannot solve the problems encountered by the juvenile offender.

DIFFERENTIAL LOW-RATE CONDITIONING OF DISTRACTIVE BEHAVIOR

by

Christine Walken

Introduction

In the last decade, the literature shows that individual conditioning techniques have been effectively used to shape a variety of responses in children (Straghan, 1964; Patterson, 1965a, 1965b; Wolf, Birnbrauer, Williams, and Lawler, 1966; Wolf, Risley, and Mees, 1964; Ayllon, 1963; Bachrach, Erwin, and Mohr, 1966; Flanagan, Goldiamond, and Azrin, 1958; Kushner, 1966; Williams, 1959; Hart, Allen, Buell, Harris, and Wolf, 1964; and Madsen, 1966). Individual conditioning techniques have been applied to parent child interactions, hyperactivity, phobias, vomiting, anorexia, stuttering, tantrums, operant crying, and encopresis in an effort to control and shape these behaviors in preferred directions. The results of these studies have provided impressive evidence for the efficacy and flexibility of these techniques when carefully controlled and applied, outside the laboratory setting.

However, when learning theory principles are extended and applied to groups of subjects, in the form of token economies, the outcomes of intervention have traditionally been less impressive. This result can be accounted for in large part by imprecise control over variables which regulate behavior. The interaction between response classes and treatment variables in these studies becomes so complex as to mask the significance of treatment effects and, in some cases, to preclude the scientific evaluation of treatment variables which are controlling behavior. These token economy studies often collapse a number of laboratory proven techniques into a unified treatment module and apply this intervention process to subjects who exhibit large amounts of inter- and intra-subject variablity in the level, type, intensity, and rate of emitted deviant behavior. Identifical treatment procedures are used to consequate such diverse response classes as hyperactivity, withdrawal syndrome, aggression, attending behavior, and lability. As a result, it becomes very difficult to establish which treatment variables are accounting for differential amounts of variance across these response classes. This problem is often further complicated by the existence of uncontrolled variables, specific to the treatment setting, which operate as conditioned stimuli in controlling, maintaining, and shaping behavior.

Individual conditioning techniques which are applied to a specific response in a controlled setting provide for greater amounts of subject matter control than do conditioning techniques that are applied to the emitted behaviors of groups of subjects in special settings. The application of learning theory principles allows for the manipulation of deprivation and satiation states, setting events, and reinforcing stimuli as well as for evaluating treatment effects by: (a) establishing stable response rates, (b) introducing a treatment or controlling variable, and (c) withdrawing that variable (after criterion performance) in order to measure its effect upon behavior. The generalizability of the resulting treatment effects can then be established by successive replications on additional subjects.

Purpose

The purpose of this study was to evaluate the effects of differential low rate conditioning procedures on the high strength distractive behavior of a nine year old subject.

Problem

Phillip was a bright (WISC: 116), underachieving male who, upon referral, exhibited a number of deviant behaviors that were incompatible with successful task oriented performance in the educational setting. Phillip was enrolled in the fourth grade and his chronological age at referral was nine years, six months. His emitted deviant behaviors in the classroom included provoking other children, not completing tasks, creating class disruptions, coercing attention from the teacher, hyperactivity, talking out of turn, and being easily distracted from a given task by ordinary classroom stimuli such as minor noises, movements of others, changes in lighting conditions, etc.

The subject was enrolled in an experimental class for behaviorally disordered children during two months of the academic school year 1966-1967. Behaviors which were directly incompatible with appropriate social behavior and successful academic performance gradually decreased in frequency as Phillip's behavior came under control of the response reinforcement contingencies operating within the experimental class setting. His academic task rate increased markedly and his social behaviors became more appropriate and more easily tolerated by his peers. Phillip's distractive behavior, however, maintained at a high rate, even though reinforcements were consistently withheld for nonattending behavior. His distinctive behavior was task specific (Moyer and von Haller Gilmer, 1955) in that he exhibited low rates of distractibility during high interest tasks and high rates during low interest academic tasks. Phillip's distractive behavior maintained at high strength in spite of "treatment", because of the experimenter's inability to manipulate such controlling variables as a large number of potentially distracting stimuli in the treatment setting, reinforcements for distractive behavior dispensed by other social agents in the treatment setting (peers), escape from an aversive stimulus (low interest task), and invention of substitute activities which were more appealing than the academic task (Goldstein and Seigle, 1961). As this behavior could not be controlled effectively in the experimental setting, an individual conditioning program was designed for administration in a setting where maintaining variables could be manipulated and sources of distractive stimuli could be controlled.

Method

The response measure in this study was established in accordance with Martin and Powers (1967) operant conditioning analysis of attention span. Distractions were defined as those behaviors which were incompatible with the process of attending to a task. Behaviors were recorded as distractions which were directed toward specifiable stimuli (experimenters, noises, movements), as well as those that were apparent responses to internal stimuli (fantisizing, daydreaming). During baseline, treatment, and extinction sessions, the subject's attending behavior was recorded during successive ten second time intervals. The following notational system was used during recording: Z = designates beginning of a new distraction; V = designates continuation of the same distraction thru successive ten second intervals; / = designates a reinforcement; -- = designates subject attended to the click (conditioned reinforcer).

Treatment sessions were conducted in a setting where extraneous stimuli were reduced to a minimum. The setting contained a table, two chairs, a lamp, and the educational task material used by the subject.

The educational task during baseline and treatment sessions consisted of programed learning material. Lessons for Self-Instruction in the Basic Skills published by the California Test Bureau, were used throughout the conditioning process. Usage of the same program helped to control interest and difficulty factors which are usually associated with different types of programed learning materials. The program also reduced the number of task related questions that the subject had to ask the experimenters for purposes of explanation and clarification.

When the subject's task rate and attending behavior had stabilized during baseline observations, the operational contingencies were verbally specified to the subject immediately prior to the beginning of treatment. The subject was instructed that when a given interval of time had elapsed, in which no distractions had occurred, a click would sound and the experimenter would enter a single check mark in a cumulative recording form. The click served first as an S^D for a reinforcing event and then as a conditioned reinforcer for appropriate behavior. The subject understood that attending to the click represented a distraction and would result in loss of reinforcement for that interval. The subject was allowed to exchange his points for a model of his choice at the conclusion of treatment.

Phillip was initially reinforced with one point for every 30 seconds of distraction free behavior. When the subject had completed 20 distraction free intervals of 30 seconds duration (ten minutes), the interval length was doubled to 60 seconds. The conditioning process was administered according to the following schedule.

Table 1

Graduated Scale for Changing
Response Intervals and Administering Reinforcers

Number of Successfully Completed Intervals	Duration of Interval	Number of Reinforcers Received (Events) (Points)
20	30 sec.	20 x 1
10	60 sec.	10 x 2
5	120 sec.	5 x 4
2.5	240 sec.	2.5 x 8
1.2	480 sec.	1.2 x 16
1	600 sec.	1 x 20

The subject spent ten minutes (total) within each response interval. In the 30 second response interval, one point was administered on 20 separate occasions. In the 600 second interval, a total of 20 points was administered on one occasion, (at completion of the interval). The reinforcing contingency was withdrawn when the subject had completed three ten minute distraction free intervals in succession.

Results

Figure 1

Proportion of Distractive Behavior
in Successive Time Samples

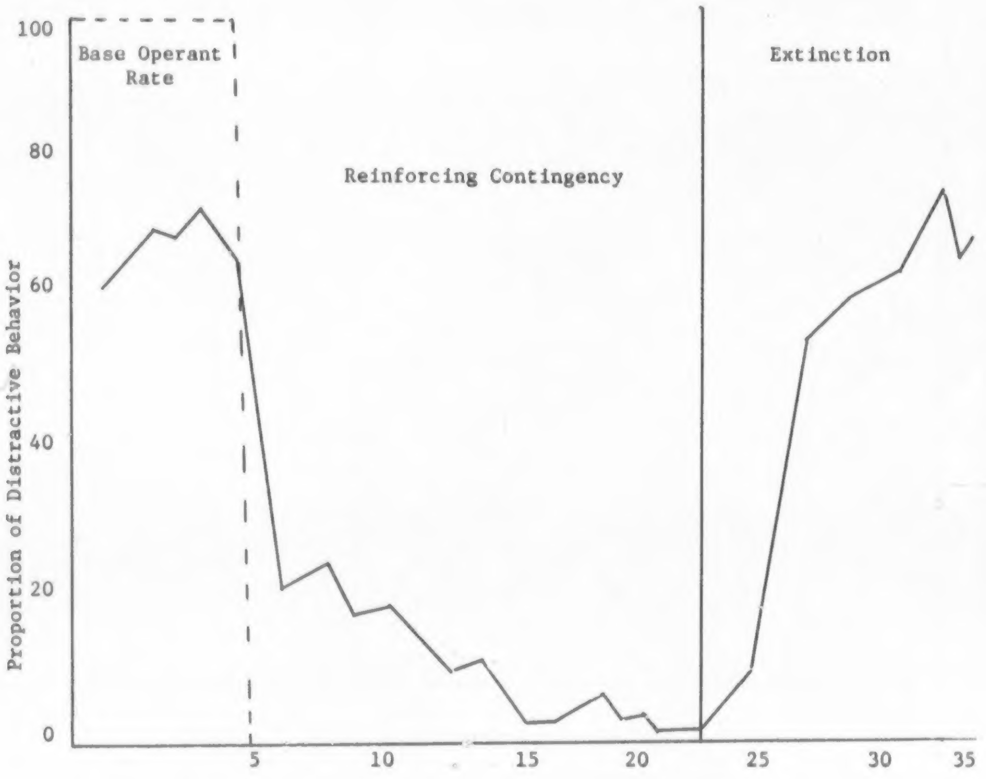
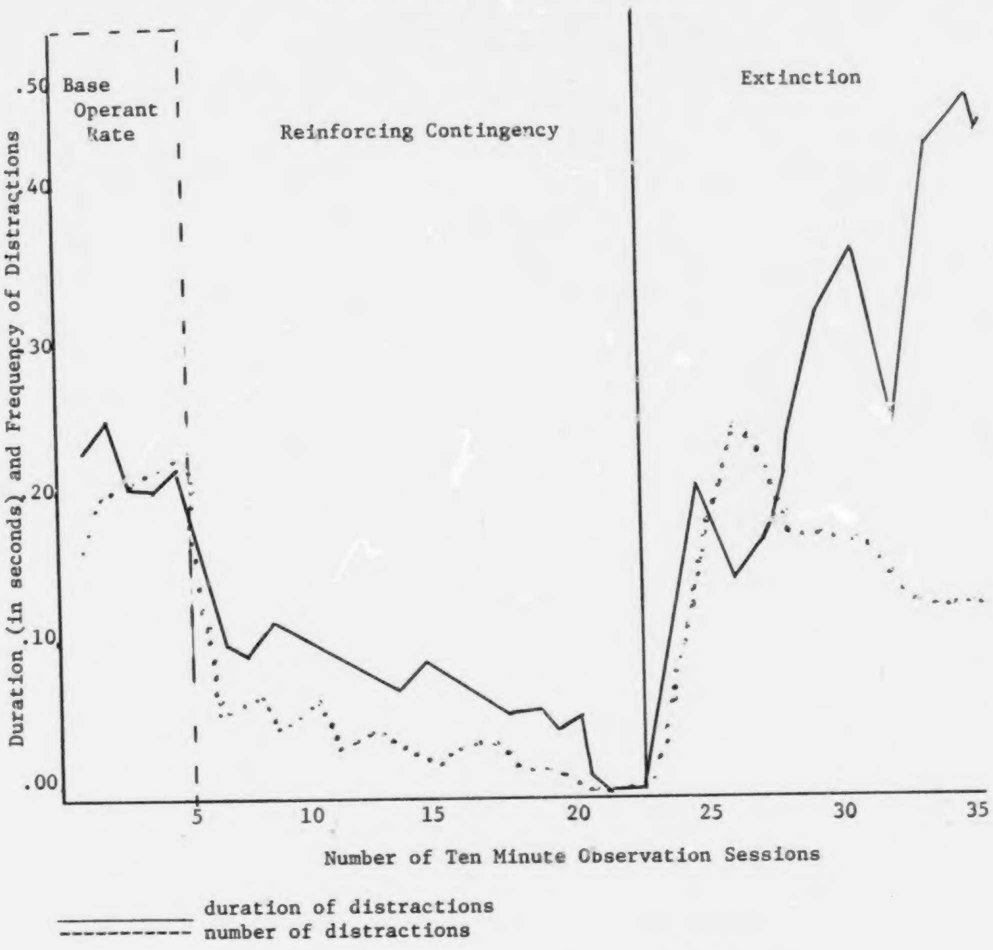


Figure 2

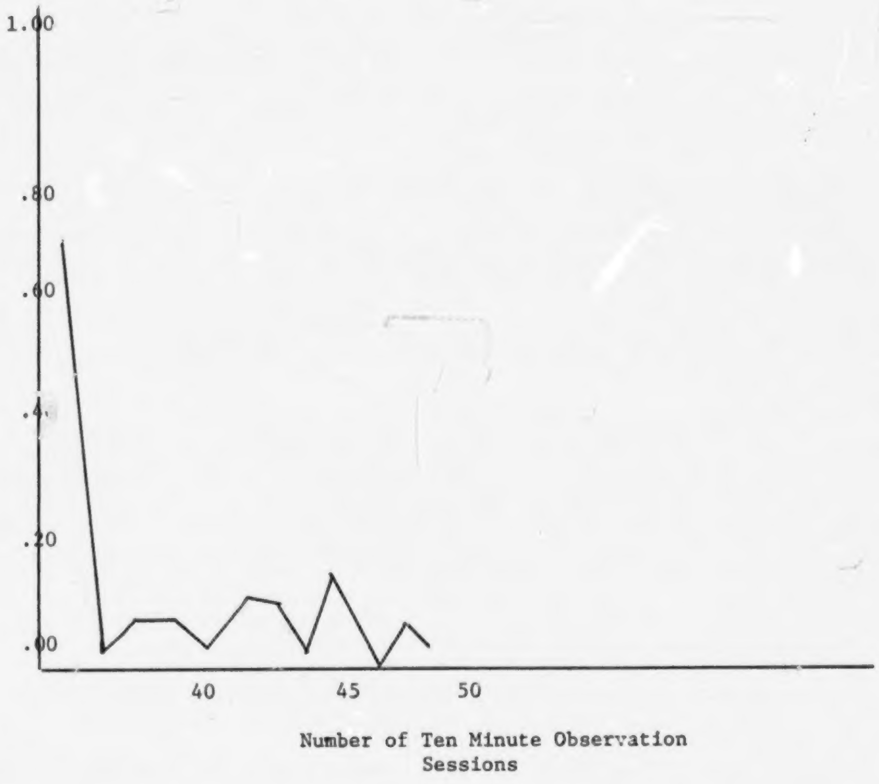
Mean Duration and Number of Distractions Per Ten Minute Session



When the subject's behavior had returned to baseline levels following withdrawal of the reinforcing contingency, Phillip was placed on a variable interval schedule in the regular classroom setting where he was reinforced (on the average) with one point for each 50 minute bloc of distraction free behavior produced. The followup data is presented in figure three.

Figure 3

Proportion of Distractive Behavior
in the Regular Classroom Setting



Discussion

As the data in Figures 1-3 attest, a systematic manipulation of the reinforcing contingency in this study produced measurable changes in the amount, duration, and frequency of distractive behavior. In Figure 1, the subject's base output of distractive behavior during pretreatment and extinction sessions was .67 and .56 respectively. During treatment the subject's output was .063. A difference of this magnitude is statistically significant at the .00016 level (Lindsley Mid-Median Test). These data further suggest that the subject's behavior came under rapid experimental control and remained under control until the reinforcing contingency was withdrawn at the termination of criterion performance. Upon withdrawal, the behavior returned to pretreatment levels, thus indicating that the alteration in behavior was due to the manipulated, experimental variable rather than to the influence of an unknown or chance variable.

In Figure 2, the response measures of duration and frequency of distractions display a similar alteration in rate in conjunction with manipulation of the experimental variable. During baseline, the mean duration of distractions was 21 seconds and the mean frequency was 19 distractions per ten minute time sample. These rates were reduced to zero during criterion performance. During extinction, frequency of distractions returned to pretreatment levels. However, duration of distractions rose far above its baseline rate. When the contingency was withdrawn, there were a series of sharp, fluctuating bursts in the response rate which suggests that the emotional effects of extinction were reflected in the subject's performance. During extinction, the subject's attention span was erratic and variable. He made such comments as "I'm tired," "What time is it?" "I don't care about earning a model anyway." During one session, the subject sat motionless for an entire session of 45 minutes and refused to attend to the task.

During reinstatement of the contingency following reversal, Phillip's emotive reactions subsided and he reconditioned rather quickly (Figure 3). As indicated earlier, Phillip was placed on a VI: 50 where he was reinforced on an average of once per 50 minutes for producing task oriented, distraction free behavior. The data in Figure 3 were taken in a regular classroom setting where the number of potentially distracting stimuli was much greater than in the controlled setting where the subject was initially conditioned. In addition, control or regulation of these stimuli was nonexistent in this particular setting.

The experimenters are in the process of transferring the control of Phillip's behavior from artificial to natural reinforcers. Each tangible reinforcing event is accompanied by the administration of attention, praise, and social approval. It is expected that the higher rates of distraction free behavior produced by the subject will stimulate the operation of such natural reinforcers as task completion, positive feedback, academic success, and the acquisition of new knowledge. These natural reinforcers should exercise a maintenance function on Phillip's established task oriented behavior. An extended followup study of the subject's academic performance will provide data on how well these stimuli maintain distraction free behavior.

The functional analysis of Phillip's attending behavior suggests that individual conditoning techniques can be used to acquire efficient, stimulus control over behaviors which are maintained by stimuli that are very difficult to control or regulate in group settings. Once the behavior has been brought under experimental control, procedures can be established for programing generalization and maintenance of the modified performance in settings where maintaining stimuli operate in an uncontrolled fashion. The results of this study appear to have implications for treatment of a variety of idiosyncratic behaviors which actively interfere with successful academic performance among children in the educational setting.

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NON-DIRECTIVE THERAPY--A MODIFICATION

by

Robert V. Turner

Introduction

The purpose of this paper is to describe a program in which a modification of nondirective counseling was used effectively in an educational setting on a short term basis. This modification involved the blending of some elements of directive techniques into a predominantly nondirective approach and the combining of group counseling with individual counseling. Although this program was expressly designed to meet the needs of a specific group, it is suggested that similar groups can be found in most junior high schools.

A basically nondirective approach to counseling was used in this program because the prospective subjects simply would not tolerate a strictly directive approach. The nondirective or client centered approach to counseling and psychotherapy has been so ably expounded over the last 25 years by Carl Rogers and his disciples that a definition here beyond the association of the term with his name would be redundant. Client centered or nondirective theory is said to have developed in a context between counseling and psychotherapy, with psychotherapy remaining as the essential core to the present (Grummon, 1965).

One of the central tenets of nondirective counseling has been that the counselor is essentially permissive, with the client selecting the goals and setting the pace of counseling. The assumption was that as nondirective counseling progressed more effective behavior would result. However, a carefully designed recent study seemed to refute this assumption (Volsky, Thomas, Norman, and Hoyt, 1965).

In recent years there seems to be an increasing tendency for counselors to take a more active part and express their own feelings openly in the interview. Tyler (1961) conceives of counseling as a process whereby the client is actively helped to use his personal resources. Both Rogers (1962) and Gendlin (1962) emphasize the importance of a two way relationship for therapeutic movement. Grummon (1965) states that a genuine expression of the counselor's feeling is sometimes followed by considerable therapeutic movement.

A traditional difference between directive and nondirective counseling theories has been the avoidance of setting specific objectives or goals by the client centered therapist.

Now, Grummon (1965) believes that the counselor can set more definite goals than Rogers advocates without destroying the client centered approach. His position is based on the statement, "The conditions deemed necessary for change exist on a continuum rather than on an all or none basis (p.67)." He contends that the counselor can focus on specific goals as well as on creating optimum conditions for change. In other words, the achievement of insight by the client can be speeded if the counselor stresses the desired goals. This idea is consistent with Van Dyke's (1966) notion of "communicated expectancies" in which the child receives and is influenced by messages from significant adults in his life concerning their attitudes and anticipations as to his performance and behavior.

Nondirective therapy, by definition, implies a permissive approach which tends to restrict its usefulness in the public school setting. The general shortage of qualified therapists, the emergency nature of many cases in the public schools, and the press of numbers plead for a faster way.

When the counselor works in an institutional setting, it is frequently the case that the problem at hand must be resolved with dispatch. In such cases the therapist must take short cuts and specify goals. This would seem to be especially true where pressure might produce anxiety in the therapist. We recall that, according to Roger's dictum, it is the client, not the therapist, in whom some anxiety may contribute to therapeutic movement.

The idea of nondirective therapy does not necessarily mean, nor does it require, a laissez faire attitude--wholly permissive, and unstructured.

As applied to children with problems in school, it should mean that therapy is not rigidly prescribed as to its direction. It certainly can and should be organized around specific goals with the therapist, quite frankly, maintaining or exemplifying certain expectations and limits. This must be done in education because of the practical considerations of time and circumstances. There is, at best, a questionable gain to be derived in education from complete permissiveness in a period of preliminary floundering. Let the child lead you. Of course! But it is asking too much of a troubled early adolescent, for example, that he sort out and select rather distant goals for himself as well as determine the most effective pathways to their achievement.

It is suggested that the term "nondirective" should refer to direction, per se, and not to destination. The therapist must maintain or exemplify the goal that he hopes to help his client achieve. In this case he can be, perhaps should be, somewhat directive. It is in the paths or ways by which the goal can be approached that the therapist should be nondirective.

Various outcomes have been attributed to group counseling or group psychotherapy, including improvement in personal and social adjustment, greater tolerance of others, better self understanding, and ability to face and solve problems (Koile, 1961; Hoyt, 1960; Froehlich, 1958; Corsini, 1957; Driver, 1954). Significant improvement in behavior and attitudes was reported by Webb and Eikenberg (1964) from a counseling program with a small group of socially maladjusted junior high school pupils on a short term basis.

From these accounts, it was felt that group counseling should receive equal emphasis with individual therapy in this program.

The problem was to devise and implement a first aid therapy program to intervene in a school situation where a large number of students were underachieving and considered to be in danger of dropping out of school. The school's plea was for any program that promised to help alleviate the situation quickly. The physical situation could scarcely have been worse. A delayed building program had resulted in two complete junior high schools occupying a single obsolete structure, on a shift basis.

While a primarily nondirective approach to treatment was selected, a judicious blend of directive techniques was included to provide a modicum of structure and to act as yeast to speed the process.

The decision to alternate group and individual counseling proceeded from the therapist's belief that each might act as a catalyst on the other, resulting in more meaningful treatment and more rapid progress in this situation than either one undertaken separately.

The work to be reported here involves the application of a combination of individual and group counseling, using nondirective and directive techniques, to a group of adolescents who were experiencing problems of academic and social adjustment to the extent that they were considered serious under achievers and in imminent danger of dropping out of school.

Procedure

The students selected for the work described in this paper were ninth graders attending a junior high school in a central Virginia city of some 40,000 population. The ninth grade in this school contained more than 400 students and was served by one guidance counselor. The age range of the subjects was 14 years, six months to 17 years, six months. The mean age was 15 years, two months.

Selection of the treatment group was accomplished by the guidance counselor to whom the students had been assigned for a minimum of one semester. Twelve students were selected for inclusion on the basis of the following criteria: (a) the counselor's personal knowledge of them and her professional opinion as to the most likely prospects to drop out of school because of academic or personal problems or both, and (b) students expressing a desire or willingness to accept help with personal or academic problems. Since need and desire for help were the deciding factors, population size was too limited for the application of random selection procedures.

Since the group as selected contained all of the most critical cases then known to the counselor, with selection based on her subjective opinion, no truly comparable group could be established as a control. Any subsequent group chosen by the same counselor would have been less critical, while choices by a different counselor would have involved different personal bias. The absence of a control group is a recognized weakness of the study.

Also recognized as a weakness is the absence of objective test results leading to statistical analysis. No data beyond observation by the therapist and school records were obtained during this study for two reasons. The first reason was concern as to the effect of insistence on tests on the therapeutic relationship. This concern is consistent with Rogers' (1942) statement, "If the psychologist begins his work with a complete battery of tests, this fact carries with it the implication that he will provide the solutions to the client's problems. These are not genuine and do not deeply help the individual, but tend to make him either resentful or over-dependent. (p. 250)."

The foregoing statement forms Rogers' early theoretical basis for not giving tests prior to nondirective therapy and constitutes the principal justification for the omission of tests from this study.

The second reason was that a majority of the subjects conditioned their acceptance of help on the promise that they would not be subjected to tests.

This work was instituted on an emergency basis in January, 1966, with the short term goal of forestalling possible dropouts by helping the participants to improve their personal adjustment and academic performance through counseling. This goal was specified to the participants at the outset and maintained throughout the period of treatment. An alternating group counseling and individual counseling approach to therapy was employed. Nondirective and directive techniques were combined, with a nondirective orientation predominating.

The participants were divided into two equal groups for group counseling, each containing four boys and two girls. A schedule was developed whereby weekly group sessions were alternated with individual conferences so that each participant had at least one session of individual therapy between group sessions. The therapist employed nondirective techniques during the group session, functioning largely as a participant observer. At the end of each group session, the therapist assumed a directive role in evaluating the completed session and in selecting discussion leaders and areas to be considered at the next group session.

Individual therapy followed essentially the same pattern, with a nondirective approach being used to deal with personal or emotional problems and a frankly directive approach in matters specifically related to school.

The approximate time ratio employed in both group and individual work was: nondirective, 90 percent; directive, ten percent.

The project was conducted throughout the second semester of school, ending in June, 1966.

A followup study was conducted in June, 1967, or one full year after termination of therapy, and again on February 6, 1968. The latter date was chosen as being one full month beyond the date on which the youngest member of the treatment group reached the age of 16. According to Virginia law, school attendance is not mandatory beyond age 16.

Results

The first counseling sessions were held in January, 1966. When therapy was discontinued at the end of the school year, each subject had had eight group counseling sessions and a like number of individual conferences. Of the twelve students originally selected, one girl did not choose to continue after the first meeting. Also, one boy was emotionally unable to participate in the group counseling sessions and was seen by the therapist on an individual basis only. As finally constituted for group work, one group contained four boys and one girl, while the other group contained three boys and two girls.

A subjective evaluation of the quality and extent of results may be derived from the following observations:

1. The guidance counselor received notice of specific and definite improvement in the work or attitude of a majority of the group members from their classroom teachers.

2. According to their report cards, shown to the therapist, most of the group had improved their grades at least one step by the end of the year.

3. The therapist observed a marked improvement in maturity level and self concept for most of the group members.

4. Considerable improvement was noted in the ability of individuals to relate to the group, to participate actively in discussion and to express definite ideas and opinions. Two rather withdrawn cases made dramatic progress in this respect. These will be described in the discussion to follow.

Judged from the school's standpoint, the experiment was successful in that grades, generally, improved and there were no dropouts during therapy.

A followup of this group made after one year (June, 1967) and again after one semester of the second year (February, 1968) is summarized in Figure I. Examination of Figure I reveals that, of the 11 students who participated, one dropped out of school during the first year of therapy; seven were performing satisfactorily in school, and three unsatisfactorily (i.e., failing). At the end of the first semester of the second year following therapy, there had been no further dropouts and school performance remained at a 7:3 ratio, as before.

Discussion

It must be recalled that the work described in this report was performed on an emergency basis in an effort to forestall the expected dropping out of the children involved. The urgency of individual cases dictated an approach calculated to get positive results in a limited time. Although based on nondirective therapy, the combination of directive and nondirective techniques actually employed perhaps could be more properly called "first aid" therapy.

It can be stated that the immediate goal of the program reported here was achieved, inasmuch as there were no dropouts recorded during therapy and the academic performance of a majority of the subjects shifted from "failing" to "satisfactory." Only one dropout was found during followup.

The improvement in work or attitudes noted by the guidance counselor occurred chiefly in the area of teacher pupil relationships. Teachers of these students reported a lessening of overt hostility in the classroom and an increased willingness to attempt at least a minimum of assigned work.

The school system where this work was done uses letter grades to record pupil progress. According to report cards, seven of the 11 members (63 percent) improved all grades by at least one step. Of the remaining two who made no improvement, one was the boy who was unable to tolerate group counseling. This boy (Number 6, Figure1) was the oldest of the entire group, at age 17, and is the one who married and dropped out of school during the first year after therapy.

The general improvement in maturity and self concept observed by the therapist centered around interpersonal relationships in group counseling. The direction of movement was from scant toleration of other group members to active concern for each others' problems and difficulties; from derisive laughter and ridicule at expressed problems during the initial session to serious efforts to help and find solutions during the final session. A generalized growth in self confidence was seen to parallel the development of group identification, which in turn, closely followed increased self understanding presumably associated with individual therapy.

Figure 1

Followup of First Aid Therapy Performed January-June, 1966

Student Identifying Number	June 10, 1967				February 6, 1968			
	School Status		School Performance		School Status		School Performance	
	In School	Dropout (Reason)	Satis-factory	Unsatis-factory	In School	Dropout (Reason)	Satis-factory	Unsatis-factory
1	X			X	X			X
2	X		X		X		X	
3	X[1]		X		X		X	
4	X			X	X		X	
5	X		X		X		X	
6		X (married)						
7	X		X		X		X	
8	X		X		X		X	
9	X		X		X		X	
10	X		X		X			X
11	X			X	X			X

[1] Has been declared an emancipated minor by court; supports self and attends night school--hence, not a dropout.

The improvement noted in the ability of individual group members to relate to the groups, to take an active part in discussions, and to verbalize personal problems, fears, or anxieties before the group was especially evident in members whose most obvious presenting symptom was withdrawal. Two cases will be described here. The first was a boy, an only child, age 14 years, six months, of average intelligence as measured by group tests in elementary grades. Frequently he refused speech, and in written answers to questions during the first session, he denied having the ability or desire to do successful work in school. He was able later to verbalize his problem to his group as centering around peer relationships and the group came through with support and practical suggestions for improvement. Followup of this boy (Number 4, Figure 1) indicates some failing work in the 1966-1967 school year but he has remained in school and was performing satisfactorily as of February 1, 1968. Group contact seems to have been the critical factor in this case. The second case (Number 3, Figure 1) was a girl, age 15, with one older brother and a rigidly controlling mother (who was separated from her husband and who entertained a succession of men). Examination of her cumulative record revealed a pattern of regression in intellectual functioning as measured by the following tests (Table 1).

Table 1

Regression in Intellectual Functioning of One Subject

Grade Level	Test	I Q
3	Kuhlmann-Anderson	105
4	Otis Beta	93
5	Lorge-Thorndike	85
6	California Test of Mental Maturity	82
9	Peabody Picture Vocabulary	68

Allowing for the differences between tests, a significant change in functioning is apparent.

Individual and group counseling quickly uncovered a mass of repressed hostility and frustration. Two months after the beginning of therapy, she attacked another girl in school with a broken bottle after very slight provocation and inflicted serious injury. However, therapy was continued without interruption. Soon after termination of therapy in June, 1966, this girl petitioned the court for release from her intolerable home situation. She was granted the status of emancipated minor and has since supported herself with a regular job while attending school at night. Her present school performance is satisfactory.

The foregoing results are supported by Mann's (1967) recent findings that "structured but permissive" group counseling with mentally retarded children resulted in improved self concept, reduced anxiety, improvement in academic subjects such as arithmetic and reading, and improvement in general school behavior.

Conclusion

The conditions under which this study was made imposed limitations which preclude the generalization of results. It was not intended as an experimental study, but as an innovative exploration in which therapies and techniques were combined in an urgency of effort to ease a critical situation in a school. In this case, it worked. Having no basis for comparison, we cannot say how well. We can reiterate that all were selected originally as poor risks, from the school's standpoint, and that a followup after one and one-half years shows that only one has actually dropped out of school, while seven of the remaining ten are performing satisfactorily. This seems to represent improvement over expectation. Also, it should be stated here that the one who dropped out was the same boy who could not tolerate group counseling, and so was not exposed to the full influence of the program. The experience of the program and the subjective evidence presented leads me to suggest that a predominantly nondirective approach to therapy which contains some elements of directive therapy (at least to the extent of the establishment and maintenance of goals), can, through an alternating program of group and individual counseling, produce positive results more quickly and of a more lasting nature than either approach used alone. At least, the results obtained suggest this as a fruitful area for further research.

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ABSTRACT

SPECIAL EDUCATION FOR THE ADDICTED STUDENT

by

Herbert Rusalem

Disengagement from prevailing social values and mechanisms characterizes the addictive process. At the time of initial addiction, this disengagement process is already well established and progressive. As the addiction experience runs its course, disengagement deepens to the degree that the student identifies himself largely with a subculture which subscribes to other values and behaviors. His increasing isolation from interaction with the reinforcing elements of the mainstream culture effectively shields the student from the common reinforcements of American society. In his isolation, he finds increasing gratification from the rewards offered by the deviant subculture.

Addiction is a complex syndrome which engulfs the total individual in a dehumanizing process. Restoration of the individual depends upon the combined impact of a variety of professional interventions, all designed to reintegrate him into the mainstream of social living. As a rule, a multidisciplinary approach, including the use of indigenous aides, is needed. In this spectrum of services special education has a unique role in that it provides a link for the addict to the world he knew throughout his childhood and adolescense. Even though the educational world may not have been fully gratifying to him, he adapts well to it in his current childlike state because the part he plays in it is relatively dependent and ego centered. If it is well managed, special education meets current needs and can be used to build a bridge to a more responsible and independent adjustment through moving the individual toward more mature relationships with others, and greater acceptance of responsibility for self.

PIAGET, SKINNER, AND AN INTENSIVE PRESCHOOL PROGRAM FOR LOWER CLASS CHILDREN AND THEIR MOTHERS

by

Norma Radin

Introduction

Discussed here is a program which uses the theories of two men whose views are not often incorporated into one program, Jean Piaget and B. F. Skinner. As a matter of fact, whether either gentlemen would feel completely comfortable about the juxtaposition of their names is not certain. Nevertheless, the staff members of the Early Education Program have found the combination to be highly effective and practical. Piaget's theory provides the foundation for the preschool curriculum which has as its major goal the cognitive growth of the children, a prerequisite for subsequent achievement in school and fulfillment as a thinking human being. Skinner's work forms the basis of the parent education program which focuses on teaching parents child management skills deemed essential for a gratifying, growth producing home life. It is felt that the program would be incomplete without either phase, or either theory.

The Early Education Program involves, as participants, 100 four year old children who come from disadvantaged homes. One-half of the youngsters are Negro and one-half white; one-half are boys and one-half are girls. The children attend class one-half day, four days per week from October through June. There are ten children, one teacher, and one aide in each classroom. In addition, each child is visited in his home every other week by his teacher who conducts a tutorial session, lasting aobut one and one-half hours, while his mother is present.

The goal of the home visit is two fold: to involve the mother in the educative process so that she may incorporate the role of teacher in her every day activities with her children, and to meet the child's individual cognitive needs which cannot be dealt with adequately in the group setting. For example, it is during the home visit that diagnostic instruments are administered which enable the teacher to assess the child's specific strengths and weaknesses. With this knowledge, she is able to attend to particular difficulties he is having. To insure the maintenance of a tutorial relationship with mother and child, an aide accompanies the teacher when other children are present and conducts an enriched play program, a dilution of the preschool program, for the younger siblings.

The Early Education Program has three major objectives:

1. To develop a preschool curriculum for use in a classroom and in a home tutorial setting based on Piaget's theory of the sequential development of the intelligence

2. To develop a model of curriculum innovation in a school system utilizing a triad of theorist, diffuser, and classroom teacher

3. To develop a group parent education program focused primarily on teaching mothers how to foster the development of internal control in their children, through the use of behavior modification techniques.

Curriculum and Method

Insofar as the Piagetian curriculum is concerned, a full description of the content and methodology would be beyond the scope of this paper. Part of the curriculum has already been described in articles in Young Children and the Journal of Creative Behavior. Fundamentally, the program is based on Piaget's concept that intelligence develops by qualitatively distinct periods, the sensory motor period, the preoperational period, the period of concrete operations, and the period of formal operations. Attainment of a later stage is not possible without solid attainment of the earlier stages. Although the age at which children enter any of the periods may vary, the sequence is invariant. Passage through the stages grows out of the coordination of actions, at first physical, and then mental, rather than by manipulation of symbols.

The curriculum goals are founded on Piaget's two aspects of knowledge: (a) the operative aspect which involves various types of mental operations, and (b) the figurative aspect which pertains to the type of symbolization involved in the operations. Examples of operative knowledge are the ability to classify, and the ability to seriate, or order things, according to an ascending or descending scale. Operative knowledge also includes the ability to handle numbers, spatial relations and temporal relations. The figurative aspect of knowledge pertains to the various levels of symbolization from the concrete object, to parts of the objects, an imprint or sound made by the object, a representation of the object, and finally to the work representing the object.

One of the major curriculum goals is to fascilitate the movement of the children from the sensory motor period, at which most of them are initially, to the preoperational period. In specific terms, facilitation of movement out of the sensory motor stage involves providing a structured setting in which the children can learn to classify objects into an increasing number of categories, to seriate three, four and eventually seven and eight objects, and to comprehend the meaning of numbers so that they will be recognized regardless of whether the objects are spaced far apart or massed together.

The second major curriculum goal pertaining to the figurative aspect of knowledge consists of helping the children to move from the concrete to the symbolic level. This procedure involves more than merely teaching the children to associate a word with an object. To truly learn a word, the child must be able to perform the same mental operations with the word that he can perform with the object it represents. Irving Sigel of Merrill-Palmer Institute, for example, found that disadvantaged preschool children have a much harder time categorizing life sized, colored pictures of familiar objects, such as a cup and a pencil, than they do with the objects themselves, in spite of the fact that the children could label the objects in the pictures with no difficulty. This phenomenon was also found in the Early Education Program. Most of the children are initially unable to perform mental operations with representatives of objects. For this reason, training in classification, seriation, spatial relations, etc. starts at the sensory motor level. To provide training in classification, children are given kits with toy objects which can either be put on the foot, such as a sock and a shoe, or on the head, such as a cap and a fireman's hat. The children are asked to put the objects together which go together. If they cannot, the teacher asks the child to show her what one does with each object. It has been found that by going through the motions in a sensory motor fashion, or by motor encoding, the children quickly see that the objects can be put into two groups. It is not critical initially that the children use appropriate words to explain the basis for their classification. It is sufficient that they be able to show the teacher what can be done with the two groups of objects. By performing the physical operation on the object, the ability to perform the operation mentally is faciliitated. Soon, when presented with other kits of items, such as those which can be eaten or bounced on the floor, the children are able to perform the operations mentally and can correctly place the objects into two categories with no difficulty.

Sociodramatic play is another sensory motor activity used to facilitate cognitive growth. When used in the manner described by Sarah Smilansky it has been proven to be a priceless vehicle for advancing the children into the symbolic world. For example, in playing "mother," the children are soon able to use blocks for food, and straws for candles, after starting with the concrete objects themselves. They learn the vital lesson that anything can be made to represent something else.

In learning spatial and temporal concepts, the children physically move over and under a table, or inside and outside a box and thus build up concepts. Similarly, in going through a sequence of physical activities the children begin to learn the meaning of "first," "last," and "next to last."

Words are not ignored, however. A modification of the Bereiter-Englemann program consisting of patterned language drills is also included in the program. In the Early Education Program, however, language is not taught for cognitive development as it is by Bereiter and Englemann. Rather, it is included to help the children focus on concepts and retrieve them. It also enables the youngsters to express the ideas they have, and thus to communicate with one another, correcting one another's misperceptions. The patterned drill is not seen as a mechanism for teaching concepts but is important in helping children to use the concepts they have acquired through a nonverbal sensory motor training program.

The curriculum development process entails three phases:

1. The delineation and sequencing of specific goals withing each of the cognitive areas. In classification, for example, the goal might be the dichotomization of food vs. things to write or draw with.

2. The development of a variety of teaching activities to help the children reach each goal. An example would be using a variety of kits which include various food items and pencils, crayons, pens, and paint brushes to be sorted.

3. The development of diagnostic tasks to determine whether or not the children have mastered the concepts being taught.

A description of how these steps are implemented brings us the model of curriculum innovation which is being developed, or the second objective of the Early Education Program. The most critical part of the paradigm, which can be transposed to any grade level, involves combining the efforts of three categories of staff members:

1. A theorist who thoroughly understands the abstract theory serving as the foundation for the program who is able to derive specific goals for the children from the theory.

2. A master teacher who is able to comprehend the essence of the theory as interpreted by the theorist, and who is capable of creatively translating the goals into specific teaching activities. The translation process involves close coordination with the classroom teacher who partici-

pates in the designing of each activity and provides feedback about its effectiveness.

3. A classroom teacher who is selected on the basis of her interest in helping to develop a new curriculum and her willingness to try unorthodox approaches when recommended by her curriculum supervisors.

In the Early Education Program there is one theorist, two diffusers, and ten classroom teachers. Whether or not this ratio can be altered without damaging the efficacy of the model remains to be tested. A third diffuser in the program performs a role that is becoming increasingly important in early intervention programs. She supervises the ten nonprofessional staff members. After participating in discussions with the curriculum supervisors, she explains to the aides how the teachers will be implementing the goals, and she discusses the role of the aide in assisting the teacher.

In addition, modifications are made so the curriculum can be used for children below the age of four during the home visit.

The theorist and diffusers meet several times per week to select and discuss the goals for the coming 14 days as they review the progress of the children revealed by their performance on diagnostic tests. New diagnostic tasks are also developed at this time. Each diffuser meets with five teachers weekly to discuss the children's progress and techniques of implementing the new set of goals. The entire staff, including the aides, meets as a unit on Friday when most of the day is devoted to hearing a presentation of theoretical material, and reports of other project members, such as the research associate and the social group worker conducting the parent program.

Thus far, the model appears to be generating great enthusiasm and a strong sense of cohesion. A feeling of great fortune in being part of the program appears to be pervasive.

The applicability of this paradigm to the kindergarten level is currently being tested in a supplementary kindergarten program primarily for children who participated in a pilot preschool program conducted last spring. In the Supplementary Kindergarten Intervention Program (SKIP), there is also a teacher eager to try the new approach, a master teacher serving as a diffuser, and a theorist, the same one who is working on the Early Education Program, Dr. Constance Kamii, who is interpreting Piaget's theory and deriving goals from his concepts of cognitive growth. The enthusiasm and cohesion evident in the Early Education Program quickly developed in the SKIP Program in spite of the usual difficulties entailed in instituting a brand new program in a school system. Although there is no question that a capable staff is essential to the success of any program, it does appear that the paradigm which has been developed utilizes and organizes these capable people in a highly effective manner.

Parent Education Program

The third major objective of the Early Education Program is the development of a parent education program, primarily focused on inner control, and secondarily on cognitive development. The staff feels that growth in both intellectual ability and self discipline are essential for success in school and ultimately in our industrial society. Time has not permitted a discussion of the fostering of inner control in the program, but it is an intrinsic part of the curriculum. The children are taught to plan ahead,to anticipate consequences of their actions, to make choices when given alternatives, and to adhere to the decisions they have reached. In turn, a portion of the parent education program is devoted to teaching parents how to foster the cognitive goals of the program which are interpreted to them. The twin objectives of intellectual development and self direction permeate all activities of the Early Education Program. The former merely has greater emphasis in the work with children and the latter in work with groups of parents.

A research design has been built into the parent program to test the effectiveness of the program per se, as well as the effectiveness of two modes of presenting the same content. Thus, there are three groups of parents, matched on critical independent variables and willingness to participate in the meetings. One group serves as a control group and is not involved in any group sessions. The other two groups serve as treatment groups, each presented with the same content in different ways. The two treatment groups are divided into small discussion groups of about ten mothers who meet weekly with a social worker in a school or community center. Baby sitting and transportation are provided free of cost. Each meeting is prededed by written and phone reminders of the next session. Incentives for attending the meetings are also provided to both treatment groups. At almost all meetings, an inexpensive education gift for the child, such as a book or puzzle, is presented with additional, more personal gifts, and a diploma, three times during the year.

The content of the parent education program consists for the most part in a Skinnerian behavior modification approach to child management. Reinforcement patterns are used as a foundation for the development of inner control by the child.

The parent curriculum is divided into three units of approximately six weeks each. There is a break of three weeks between units, each presented as an entity having its own introduction and summary. Unit I focused on principles of behavior modicication which were related to specific child management problems suggested by the mothers. The first lesson dealt with an overview of behavior modification, differentiating contingencies which increase or maintain behavior, contingencies which reduce the frequency of behavior, techniques of shaping new behaviors, etc. The second lesson pertained to intermittent and continuous reinforcement schedules and their consequences. The third lesson differentiated primary and secondary reinforcements. The fourth dealt with punishment, and the fifth with other techniques of reducing the frequency of undesirable behaviors. The sixth lesson and last was a summary of the entire unit.

Unit II, now in progress, focuses on activities the parents can engage in to foster the cognitive development of their children. The intent is to indicate techniques by which commonplace household and play activities can be utilized to reinforce the classroom goals. The unit started with an observation of the class program preceded by a talk by one of the curriculum supervisors discussing the preschool curriculum. The weekly lessons are paralleling the class program. For example, one lesson focuses on how parents can encourage and help their children to engage in sociodramatic play at home to facilitate their ability to handle symbols. Another lesson indicates how music can be used to foster motor encoding by acting out the words to songs. A third lesson points out how trips to the grocery can become golden opportunities to enhance classification skills in discussions about the meat department and the varieties of meats, the dairy sections and the varieties of dairy foods, types of cereal, etc. Throughout this unit, the principles of behavior modification discussed in Unit I are continuously employed. Thus, the parent is encouraged to offer praise when the child elaborates his role in a make believe session, or the parent is taught to shape the child's behavior by reinforcing approximations of the desired response when the child has difficulty performing a task, such as taking the role of grocer.

Unit III will focus on fostering self reinforcement or inner control by the child. Once again, paralleling the class program, specific less will deal with offering reinforcement for manifestations of inner control, and with giving children choices and structuring the situation so that he is strongly rewarded only for adhering to his decision. The transition from external reinforcement provided by the parent to internal reinforcement coming from the child himself will also be discussed, along with the phenomenon of intrinsic rewards evolving out of successful experiences with a particular activity.

The two modes for presenting the above content are the lecture approach, typical of many parent education programs, and the participation approach, in which the parent actively engages in some aspect of the program. An example of participation would be completing a homework assignment, role playing or rehearsing in the group sessions, and commenting upon role playing by staff members.

By comparing the attitudes and behaviors of the parents in the three groups, as well as the progress of their children, some tentative conclusions can be reached by the end of the year, it is hoped, concerning the effectiveness of the parent program and the optimal method of presenting the content.

Although the school year still has several months to go, and the post measures have not been taken as yet on the instruments evaluating the parent program, some subjective comments can be offered. The most outstanding phenomenon is that each group has developed a core of enthusiastic members, about one-third of the total number, who come regularly and give every indication of using the material they are learning. For example, one mother reported of her daughter, "She really learned to put her toys away when I started using that reward system instead of just nagging her. Now she sometimes does it without any stars, with just my praise."

Another mother reported, "I guess I'm really learning to use those new practices you've been teaching us, and it's not just my preschooler that's benefiting. It's my older boy, too. Instead of yelling at him or spanking him, I've been doing some of those things you told us about and do you know, he raised every single one of his grades on his last report! He seems much more relaxed and happier since I've been less cranky with him."

Finally, this comment from a third mother will serve to illustrate the parents' responses, "You taught us to give our kids alternatives instead of flat orders all the time. The other day I forgot to, and I ordered my daughter to stop yelling. She caught me short and said, 'You forgot my choice, Mother, what is my other choice?' Giving alternatives really results in her choosing one and sticking to it. It really helps."

On the other hand, each group has a core of nonattenders, also about one-third, who never attended a single meeting, although each week almost all asked to be reminded of the next session. These women appear to be the most disadvantaged. At the moment, plans are underway to offer them a differential program. Before the school year ends, a team of two of the active mothers will visit the homes of some of the nonattenders and summarize what has occurred in the meetings. Possibly, a second nonattender will be asked to join the trio, and a small group session will be held. The active members, who appear to be developing missionary zeal, reacted very positively to the possibilities of this approach.

The rather unexpected situation that has developed is that the members of the lecture group appear to be as involved in the program as the participation group. It has been found that mothers will not accept a lecture followed by a brief discussion. They won't go home until what is on their minds has been disucssed. On the other hand, in Unit I, the members of the participation group were very reluctant to engage in role playing, possibly because they found the area too threatening. The situation seems different in Unit II, which focuses on cognitive development. For example, mothers who were very reluctant in Unit I to enact the role of the parent finding her child playing with matches, seem, in Unit II, to enjoy taking the part of an animal to rehearse for sociodramatic play with their children.

A tentative conclusion that has been reached thus far is that a participation approach may not be equally suited to all types of content, at least not with disadvantaged group members. Further, it appears that content can be communicated and group cohesion developed purely through verbal interaction, even with women from low income homes. Whether there is something inherently attractive in behavior modification principles not present in other areas which might have been discussed is not known. We have also learned that offering concrete incentives for attending meetings, and eliminating all conceivable obstacles to group participation is not enough to overcome the resistance of some mothers to meeting outside of their homes, with a group of unknown women. As I have indicated previously, we are beginning to feel a different approach is necessary with these individuals. Taking a lesson from good behavior modification techniques, we are now trying to proceed by small steps. We are reducing the group size to three, trying to hold it in members'own homes, and using only nonprofessionals in initial contacts. It is hoped that through a series of "minigroup" sessions such as these, the mothers will eventually feel comfortable enough to join the larger group.

Results and Discussion

Because the school year is not yet over, I cannot provide any information as to how effective the Early Education Program as a whole has been. However, as a prediction of possible outcomes, I would like to mention briefly some results that were obtained on last year's five and one-half month pilot program for the Early Education Program. The project was known as the Gale Preschool Program and involved 20 disadvantaged four year old children. The format of the program was identical with the Early Education Program except that there was no group parent program. Dr. Constance Kamii, our theorist, was in Geneva at the time, studying under Piaget, so communication about the curriculum which was in its infancy, had to be conducted via mail. Nevertheless, it was found that the mean gain on the Standord-Binet Intelligence Scale was 13.7 points, and on the Peabody Picture Vocabulary Test, 12.7 points. The children's interest in academic affairs increased significantly according to a standard teacher rating form the Pupil Behavior inventory. The parents were found to increase, overwhelmingly, the amount of education they felt their children must have, the amount of schooling they expected their children to receive, and the educational materials available in the home. The grades that would satisfy the parent dropped, however. It is felt that this may not be undesirable, as their standards for their children may have been becoming more realistic and hence, better for their children, according to Irwin Katz.

The most surprising finding was that the best predictor of gain in Binet IQ, explaining 49 percent of the variance, was a factor on the Pupil

Behavior Inventory, pertaining to dependency of the child. The children who were seen as possessive of the teacher and seeking constant reassurance were the children who gained the most. The correlation was highly significant when each teacher's class was examined separately or the entire group combined. The hypothesis offered is that dependency is actually "susceptibility to social influence" as described by Walters and Parke, and this characteristic is a great asset for young disadvantaged children who are likely to be alienated and distrustful of adults. Perhaps orienting oneself toward adults and perceiving them as reinforcing agents is an important precursor for cognitive growth among preschool children from low income homes. The possibility that some such linkage exists is currently being explored in greater depth.

One disturbing finding arose out of a post post testing of the Gale graduates conducted late in August, two months after the program had ended. The purpose was to determine the stability of the gains achieved in preschool. It was found that the gain on the Peabody Picture Vocabulary Test held up completely, but there was a 6.4 point drop on the Binet. The decline was virtually identical for children who had attended a summer Headstart Program and those who did not. An item analysis was performed on the Binet, and it became clear that the loss did not occur uniformly across all items. Those pertaining to abstract concepts, such as spatial relations and classification, showed a sharp drop On the other hand, items tapping purely perceptual or labeling skills either showed no decrement at all or a gain. The conclusion reached was that teaching verbal and perceptual skills is far easier than teaching concepts. Two efforts are currently being made to remedy the situation. The early Education Program's preschool curriculum is being carefully developed, with continual diagnostic testing, to be certain that the children are comprehending what is being taught. In addition, the Supplementary Kindergarten Intervention Program, referred to previously, is continuing the Piagetian and language training program during the half day when the children are not in regular kindergarten. It is hoped that by extending the period of exposure to the program, the growth displayed in the preschool program will be preserved.

Comparison with Other Programs

Before concluding, I would like to put the Early Education Program in a frame of reference by comparing it with four other intervention programs involving young children currently in operation in the US. Many others could have been chosen, but these four have such distinctly different orientations that contrasts emerge very clearly. The four programs are conducted by: (a) Ira Gordon (Gainsville, Florida), (b) Sigfried Englemann (Urbana, Illinois), (c) Susan Gray (Nashvilee, Tennessee), and (d) Bettye Caldwell (Syracuse, New York).

Ira Gordon, of the University of Florida, is operating a project which resembles the home visit aspect of the Early Education Program, but involves a much younger group. Low income mothers are visited weekly in their homes by nonprofessional parent educators, starting at the time the children are six weeks af age, and until the children reach their first birthday. A second group of children will receive weekly home visits between their first and second birthdays, while a control group of youngsters will receive only visits from nurses. Thus, both the efficacy of the home education program and the optimal age of instituting it are being evaluated. The emphasis in the home instructional program, which has a strong Piagetian slant, is on demonstrating to the parent techniques of stimulating the child's sensory motor development and of engaging in play activities with the child which will foster his cognitive development.

A program that has points of similarity with the classroom phase of the Early Education Program is Sigfried Englemann's project with four year old children at the University of Illinois. He is modifying the now familiar Bereiter-Englemann curriculum. The language segment has been retained, but the arithmetic and reading portions have been dropped. In their place is a new curriculum, oriented toward teaching the children skills required for success on the Stanford-Binet Intelligence Scale. The reationale behind this approach is that if the Binet predicts school competence, it is logical to determine the abilities it taps, and teach those skills directly. As this is the first year of the program, the curriculum is in the early stages of development and no objective results are available as yet.

Susan Gray of Peabody College is conducting several types of preschool programs. The one I would like to describe closely resembles Gordon's program in consisting only of home visits, but the children in Gray's program are approximately four years of age, and the home visitors are professionals. The children recieve weekly visits during which a teaching session is conducted in the presence of the mother. An explanation of the curriculum is given to the parent, and additional assignments are left with her to use with her child during the week. An informal test is administered to the child at the beginning of each visit to determine how much ground has been covered and to motivate the parent to fulfill the assignment. It has been found that most of the parents become very active and enthusiastic participants by the end of the year. This home visit program differs from that of the Early Education Program in that no effort is made to keep siblings out of the teaching situation. Rather, they are encouraged to participate since one of the major goals of the program is to facilitate the cognitive goowth of the younger children in the home who are not the direct targets of intervention. The gain in IQ of the four year olds, and their younger siblings, is being compared to a comparable group of children and siblings who are participating in classroom programs using a similar curriculum.

At the Children's Center in New York, Bettye Caldwell is operating an educationally oriented day care program for children six months of age to five years, one-half of whom are middle class and one-half lower class. The curriculum is described as enriched but relaxed. The children spend three to nine hours per day in class. The program becomes progressively more structured as the children approach kindergarten age. The program for four year olds is preacademic in nature and focuses on perceptual training and concept formation. The children appear to be suffering no damage as a result of their prolonged absence from their mothers. With the number of working mothers increasing steadily, and the importance of cognitive stimulation gaining wider acceptance ddily, it is likely that the Caldwell program can offer us a glimpse of education in the near future.

It is apparent that early intervention programs are proliferating rapidly, and that a diversity of approaches, starting at the nursery level, are being explored. This is most fortunate, for it would be sad indeed if a field which started to flourish less than a decade ago were to become so frozen that there would be no room for fresh ideas. We still do not know for certain what the best program is, for which type of child, offered at what age level, for how long a period. As the answers begin to come in, in the form of evaluations, and followup studies of the many ongoing programs, it might be worth keeping in mind the relatively unexplored areas that still remain. To mention a few, what is the most effective program for fathers of young disadvantaged children? What combination of approaches, offered at different age levels, is optimal? Is it feasible for industries and institutions employing a large number of unskilled employees to operate child centers on their premises and provide released time for parents to participate in the educational program? Can older siblings be trained to provide stimulation for their younger brothers and sisters? what would be the effect of cognitively oriented programs on nondisadvantaged preschoolers? Would a differential educational approach to boys and girls be beneficial? (Kagan and others have found a sex difference in mode of responding even in early infancy.) And finally, is it true, as an increasing number of educators have been implying, that preparing very young children for later competence in school is the best foundation for mental health that can be offered? It is to be hoped that the answers to these questions will be forthcoming soon.

ABSTRACT

RESEARCH ON TEACHER CHARACTERISTICS

by

John F. Mesinger

One problem initiated by the Southern University Professors' Consortium is that of 1.teacher candidate characteristics. For purposes of analysis these may be divided into: (a) cognitive and (b) affective factors. Under the latter rubric we may consider such aspects as creativity, personality, and attitudes.

To give such measures purpose one must define and measure: 2.teacher behaviors in the classroom. This may involve prior teaching performances as well as performances concurrent with the degree work.

Since the raison d'etre for teachers is pupil changes, this implies a need to measure: 3.pupil behaviors, 4.teacher interactions with pupils and, thus, teacher pupil effects.

These problems should logically lead to a study of program selection criteria which effect problem one and the study of training programs and their effects upon problem two.

By referring to the outline of Hollister and Goldston, it is possible to see many of the interactions which must in some way be specified and measured. "An Inquiry into Variations of Teacher Child Communication," by Cohen, Lavietes, Reens and Rindsberg, supplies an illustrated (by anecdotal record) discussion of the kind of teacher pupil interactions which must be measured.

Morse Cutler and Fink have developed data from a factor analytic study of pupil behavior in programs for disturbed children which seem relevant to the task of validating the basic research problem described in problems one and two.

Prior to a discussion of the current state of knowledge concerning the characteristics of effective teachers of emotionally disturbed children, a general idea of the data developed in the broad field of teacher analysis seems necessary. Particularly, the work of Getzels and Jackson seems highly relevant.

The review of the literature specific to our task is depressing even if only limited to the complexity of variables to be measured by primitive instruments. The increasing sophistication of data analysis seems promising. However, information thus gained will be limited by the quality of the raw data gathered.

BEHAVIOR MANAGEMENT TECHNIQUES

by

Roger Kroth

At the 1967 Council for Exceptional Children Convention in St. Louis, Dr. Richard Whelan of the University of Kansas, suggested that the initials "E D " in emotional disturbance might appropriately stand for excesses and deficits of behavior. Most observers of behavior in children are reasonably comfortable with this manner of approaching the problems of pinpointing, recording, and modifying behavior. Some referent may be a baseline or a continuous record of the determined behavior under existing conditions, a comparison of the frequency of occurrence of the behavior between the referred child and other children in his class, school or other comparable group, or a comparison of the frequency of occurrence of the behavior with some internal scale of the observer.

Target Identification

The first step in establishing procedures for modifying behavior is to identify as specifically as possible the observable act that one wishes to have changed. In general, target identification is the responsibility of the one who refers the child. In essence, when one refers a child for special help, he is saying that a particular behavior or set of behaviors is happening so frequently or infrequently that one cannot consider the act to be normal. In other words, the observed behavior must be changed in some discernable way for the child to remain in the environment where he is presently functioning.

Recording Data

Once the target has been identified, recording procedures are instigated. The type of recording that is done depends on the stated problem. For instance, if the teacher complains that the child has a short attention span, then the recorder will record the duration of attention to task. If the teacher complains that the child talks out in class, then the recorder will take a frequency count of "talk outs" during timed observation periods and he will record the rate of talking out per minute or per hour. If the teacher complains about the daily occurrence of a low percentage of problems correct, then records will be kept of percentage correct. In the instance of low percentage correct, the observer also may record the rate of occurrence.

Managing or Modifying Behavior

The remainder of this paper will be devoted to techniques for managing behavior. In the literature on behavior modification one will find a large number of studies in which food, money, toys, and other material rewards have been used effectively to modify or change behavioral patterns. To those working in the public schools the difficulty of applying these material consequences to increase or decrease certain behavioral responses is obvious. Using M & M's or pennies in the classroom has its drawbacks.

The techniques described in the remainder of this paper will at times sound familar. In this case familiarity need not breed contempt. What is important is the consistent, systematic application of these techniques as well as the appropriate selection of the technique to be used. As most teachers know, good management is hard work.

Recording

Teachers often have noted that when a child is aware his actions are being recorded, his behavior will be altered. Children may spell poorly during the week but when Friday test is given, the results of which will be recorded in the grade book, performance is significantly improved. Teachers have observed that looking at a child who is acting out, then opening a grade book while the child is watching, and making a mark without comment, often will stop the acting out behavior temporarily.

Numerous specific examples of the effects on behavior when one knows his acts are being recorded could be given. Recently a university professor was trying to keep track of which students were contributing most often to class discussion. As the graduate students became aware of what the professor was counting there was a sharp increase in contribution in class. One of the difficulties that occurs in obtaining baseline data on human subjects is that when subjects become aware that what they are doing is being recorded they alter their behavior.

Knowledge that awareness of behavior recording effects performance may be used to modify behavior. The decision as to whether to place the graphic record on public display of two or more children depends on the effects on performance rates of the children when this is done. For child A it may be a highly accelerating consequence to see his graph grow faster than that of other children. For child B, if he does not grow as fast as other children, it may have a decelerating effect. In general, for the practitioner in special education working with children who have been unsuccessful in public school competition, it seems that a graph kept by the child or teacher and displayed only to the child, teacher, and parents is the most effective way to accelerate academic behaviors. In this instance, the child is in competition with himself and his past performance. His performance is more analogous to the Sunday golfer who tries to beat his own score rather than the professional golfer on the circuit who has to beat his opponents.

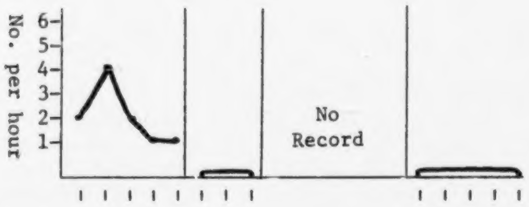
Children can be taught to keep their own charts or records at almost any grade level. At the Children's Rehabilitation Unit at the University of Kansas Medical Center, primary level physically handicapped children are taught to fill in the amount of problems done correctly on large teacher developed graph paper with color crayons. Three large classes of third and fourth grade children in a public school in the Kansas City metropolitan area kept daily charts on the number of arithmetic problems they did correctly under timed conditions. In instances cited, almost every child made continuous growth in problems correct per minute and all children improved over the first day's performance.

Self recording can be used to decelerate the frequency of undesirable social behavior. Most of us have had the experience of keeping daily records on some aspect of ourselves. A common example is that of placing weight charts in the bathroom or on the refrigerator door. A classroom teacher used this technique with an overweight student during the fall of 1967. The student went from 163 pounds to 157 pounds in twelve days. The student weighed and graphed his progress in the nurse's office every morning before school. This procedure was used effectively with a fourth grade boy who was out of his seat so frequently that it was distracting to the teacher and to the class. The boy had been referred to the Children's Rehabilitation Unit because of management problems plus inconsistent classroom performance. Recommendations from both psychiatric and social work evaluations included possible residential treatment and psychotherapy. These recommendations were held in abeyance while attempts were made to maintain the boy in a regular class with behavioral management techniques.

The teacher selected those target behaviors of greatest concern which were "out of seat" without permission and "talking out" without permission. The teacher then recorded the frequency of occurrence of the pinpointed behaviors for six days. Special attention was given to the nine to ten o'clock period. (See Figure 1)

Figure 1

Self Recording Out of Seat



After the six days of baseline, the boy was asked to keep his own chart with the teacher reminding him to mark it. The "out of seat" behavior dropped to zero during the nine to ten o'clock period.

There was resistance on the part of the boy for keeping his own charts after the first week. He threw his chart away after the second week, but agreed to keep it for the third week. It was decided at that time that he did not have to keep the records from then on, contingent upon acceptable behaviors in the classroom as determined by the classroom teacher. The teacher was impressed by the youngster's self control and the boy is in regular class over a year later with acceptable behavior and satisfactory academic achievement.

The technique of using graphs to modify behavior has been used with numerous youngsters with success. Self recording appears to be effective. The practitioner, however, must be alert to change and be willing to remove the procedure before it is worn out.

Time

In the United States there appears to be a high value attached to the rate of production. Children are quite aware of the importance attached to numerous records involving time, i.e., the record time of the mile run or the points scored per game in an athletic contest. Boys in particular are interested in how many miles per hour a car will go. Children will ask to be timed on how long they can hold their breath, stand on their hands, or perform some other feat of endurance. Parents have used this knowledge for years with statements like "let's see how fast you can pick up the toys in this room" or " you have three minutes to get ready if you're going with me to the store."

In general there are two categories of time: (a) the duration of time to perform a specified task, and (b) the number of tasks in a series. In the first instance the task is specified and performance time is recorded, and in the second instance the time is specified and the number of tasks are recorded. Procedures for modifying behavior can be developed in either category, depending on the goals of the teacher or behavioral manager.

Frequently, in the literature on emotionally disturbed or socially maladjusted children, one sees reference to the short attention span of these children.

Seldom is there mention of umder what environmental conditions and at what task the child has a short attention span. Children with short attention spans in a classroom environment on an uninteresting task can be found spending endless amounts of time in working out ways of keeping out of work, or in planning and implementing plans to remove and dispose of hubcaps.

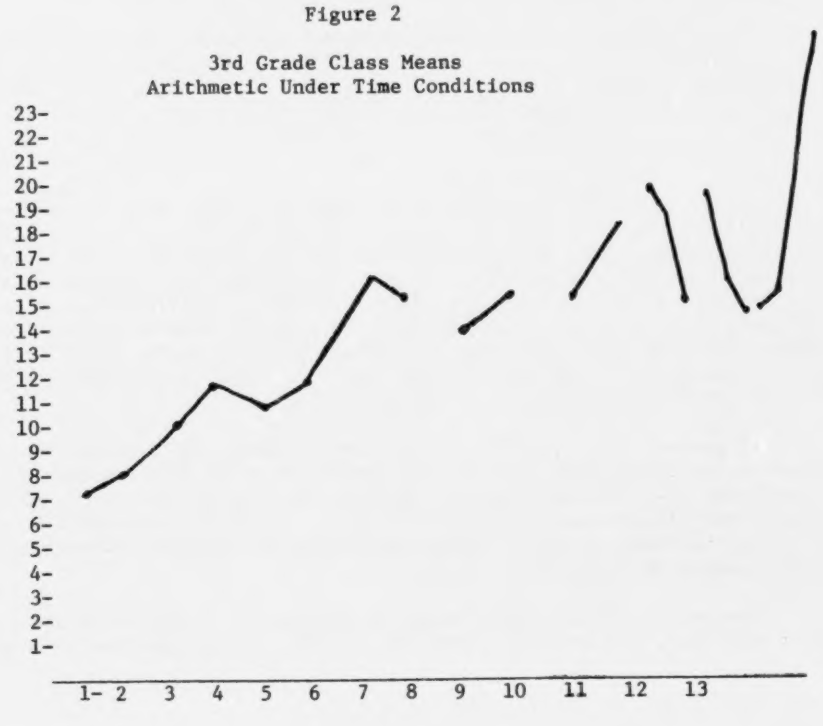
With some children it has been effective to allow them to keep track of the amount of time it takes them to do a certain specified task. If the task is held constant it may be quite rewarding to the child to beat his previous performance time. In the field of education it is difficult to maintain constancy of task. An example of how this may be done is to present a given amount of number facts on flash cards and see if the child can improve the time it takes to respond correctly to them. Another task may be a given number of Dolch words to which the child responds correctly while keeping track of start and finish times.

The method of recording time will depend on the age and ability of the child, and the ingenuity of the teacher. Children who can tell time can use the wall clock, and they can record on the top of their papers the time started and time finished. Some children can use the stopwatch to record the time lapse. Teachers have stamped two clock faces without hands on the child's work sheet and they have asked the children to draw in the hands of the clock for start and finish times. This has been done successfully with primary level handicapped children. Some teachers have used the automatic time recorders that stamp the times on the children's work sheets.

The other approach in using time to modify behavior has been to hold time constant and see how many tasks in a series the child can perform. Using this technique of controlled time, immediate recording of performance, and daily practice with a class of third grade youngsters, group means went from 7.6 correct arithmetic problems per minute in 12 days. All children improved their performance. (Figure 2)

Figure 2

3rd Grade Class Means
Arithmetic Under Time Conditions



All children improved their performance (Figure 2).

In order to try to determine if differential timing conditions have differential effects on the arithmetic production rates of delinguent males in two cultures, a series of tests were administered to institutionalized delinquent males in Costa Rica and the United States. Sheets of simple arithmetic problems were prepared. The four time conditions were a five minute timing undisclosed to the subjects, a one minute timing, a three minute timing, and a six minute timing. In each condition the subjects were told to work as quickly and correctly as they could. The subjects had a significantly higher rate of correct arithmetic problems under the shorter known time limits than they did under the longer time limits.

The setting of time limits seems to have an effect on production. This, of course, is not news. Time limited therapy has been suggested by psychoanalysts from Freud's time to Franz Alexander. In fact, a study of Shlien, Mosak, and Dreikurs in 1962 resulted in significant growth in self concept in half the time limits were designated in advance rather than under unlimited therapy conditions.

Materials

The appropriate selection and presentation of curriculum materials for exceptional children may have tremendous effects on both social and academic behavior. The short attention spans mentioned earlier may be related to material that is too easy, too difficult, uninteresting, poorly programed, as well as being related to ineffectual consequences for emitted responses.

For those behavioral managers who are merely interested in watching the line on a graph suddenly rise, it is possible to obtain outstanding results by changing materials. If, for example, the target selected for acceleration is the number of correct arithmetic problems per minute, one may start the subject on problems that require a large number of operations to solve. Then the teacher can change to simple operation problems and the records will show a dramatic rise in problems worked per minute. Similarly one can obtain a rapid increase in the number of books read per week by changing from books like Edwards' Experimental Design in Psychological Research to books like Huff's How to Lie with Statistics.

While these examples seem obvious, the point is sometimes ignored when one evaluated a pupil's progress. If rates of production are horrendously low, and they are accompanied by unacceptable social behavior, then one should examine the pupil's ability to respond to the presented materials. If the material is inappropriate, then superior methodology will have little effect.

Assuming that the material has been selected appropriately, there still remains a great deal to be said about the methods of presentation. Quite often an analysis of the child's work will reveal some possibilities for rearranging the method of presentation. An example of this type of analysis is found in the case of Bart. Bart was a third grade boy who had classroom behavioral problems as well as low academic performance. There were enough high points in his daily record of work to indicate that functionally he was capable of better performance (Figure 3). At point A on the graph, the teacher stood beside Bart and told him that he was to finish his assignment if he expected to go to lunch with the rest of the class. The boy demonstrated that he could do work quickly and correctly. Although holding lunch is a procedure that has been used to get assignments done, it was felt that in the public school classroom this would probably not be a first choice procedure. At point B an analysis of the youngster's work showed that he would work one line but not complete the whole assignment. It was decided to structure the assignments and provide Bart with strips of work from the full page assignment. An immediate change took place and was significantly different (P. 005) than early performance rates. Bart even asked for more work to do. At point C the task was changed to subtraction. Bart's rate of correct performance dropped to a point parallel with earlier work. The teacher grouped four youngsters together who had similar problems for reeducation. Within a short time Bart's rate went back up.

Another point to consider in using materials to modify behavior is the order of presentation. The most difficult materials often have a low probability of being accomplished and to insert them at the end of the day is to flirt with danger. By the same token, few teachers who have taught hyperactive youngsters would have a class party at the beginning of the day if there was any expectation of school work during the rest of the day. Therefore, Premack's hypothesis that "of any two responses, the one that occurs oftener when both are available can reinforce the one that occurs less often, but not vice versa", tends to be confirmed in every day teaching situations.

People

The last major category to be considered in developing procedures for managing behavior is people. During the past year at the Children's Rehabilitation Center, parents have become more directly involved in learning and applying behavioral management techniques. The purpose has been to try to develop the greater 24 hour consistency of a residential center for children who are in day schools.

Regularly scheduled meetings take the adversiveness out of coming to school for parents whose major contact with the school in the past was at those times when their child was in trouble. Daily report cards are used, which the parents graph at home. Emphasis is placed on the positive growth in attitude and academics. While our research in this area has been compounded by too many uncontrolled variables it appears that the coordinated efforts of the significant adults in the life of the child produces as great effect for some children as extrinsic material rewards. Using parental praise and daily report cards, the children have equalled or improved the level of growth they had accomplished under a reward system using trading stamps.

The major emphasis of the conferences has been classroom behavior and academic achievement. Usually meetings were schedules on a weekly basis for the first three or four weeks. These meetings seldom lasted over an hour, and rather specific procedures were discussed. Continual emphasis was placed on the importance of parental praise for appropriate behavior, and the replacement of action for talk for inappropriate behavior. Children seem to attend more to what one does than what one says, while adults appear to attend more to what one says he's going to do than what he does. Most of our parents of emotionally disturbed children are highly verbal.

After the first series of meetings there is movement to a maintenance program. meetings are every two or three weeks and last only for fifteen to thirty minutes. Parents are encouraged not to come to school when the child has a bad day, but to wait for the scheduled conference. This is done so that the association is not made between "bad" and parent conferences. The impression of the staff and of the parents has been that these procedures have had a good effect on modifying the children's behavior, and on public relations between staff and parents. Most parents enjoy being considered as part of the team.

Another technique that appears to show promise is the use of peers to modify the behavior of aggressive, acting out children. During the past year Mr. Herman Cline, a junior high school counselor in Olathe, Kansas, has been been working with groups of socially sensitive students in an effort to help the students who are lonely, withdrawn, or aggressive. Enthusiasm is high among the staff as well as among the students. It has been difficult to measure the effectiveness of the program because of the uncontrolled variables. One tends to be impressed, however, by anecdotal reports.

One eighth grade boy who has had scrapes with the law, and whose behavior was such that a meeting was called by staff to discuss expulsion, led to the development of the program. It was felt that the youngster could be maintained in school for some time by the use of behavioral management procedures of obvious recording by the teacher (the boy knew he was in trouble anyway), and by the use of a time out room. It was the opinion, also, that something positive needed to be done. This led to the use of peer groups.

Among other things, the school had not been able to get the boy to dress for gym in two years. Some of the male social leaders felt this was a place to start. By asking him to come out and play with them, they got him dressed and playing within three days. At this time the boy is still in school. He is still a concern to personnel, but there has been definite improvement. There are many small anecdotes that lead one to expect this approach will produce results.

Summary and Conclusion

The general procedures of pinpointing, recording, and modifying behavior have been discussed. Techniques of managing behavior other than the use of food or money and other material reward and punishment systems have been presented.

It would seem that these procedures show promise. They are easily applied and within the realm of possibility in any school setting. The emphasis is on the positive rather than on the negative, and the goal is improved behavior through the systematic application of consequences to behavior.

SELF-CONCEPT RESEARCH: DEFINITION PROBLEMS WITH A COMMON LANGUAGE CONSTRUCT

by

Lee M. Joiner, Edsel L. Erickson, and Richard C. Towne

Today an increasing effort seems to be occurring in research dealing with empirical event management, behavioral analysis, and environmental structures. A number of researchers who once might have been interested in constructs such as self concept have abandoned them in favor of more tractable ones. What appears to be a lessening of interest in hypothetical constructs, states of the organism, and internal dynamic variables is apparent in the change in programs and publications of the Council for Exceptional Children over the past five years.

In light of this trend, presented here are some of the reasons that an intuitively appealing notion such as self concept has not actually paid off generously in a scientific sense (Wylie, 1961; Brookover, Erickson, and Joiner, 1966). In so doing, some of the basic requirements that must be met in order for constructs to become scientifically fruitful will be briefly discussed. As the same time some recommendations which will lead to better self concept research will be made.

Difficulties Associated with Self Concept Research--Epistemological

Predictability vs. Plausibility

The first of the requirements relating to the productivity of a construct concern its status as a predictor of some behavioral event that is of interest for one reason or another. Regardless of the theoretical elegance of the network within which a construct is embedded, a final evaluation of self concept as an educationally relevant variable depends upon how well it serves to facilitate prediction and control of processes central to education. This means, for example, that if we postulate that "to protect a good self concept one will strive hard to select those behaviors which will preserve or enhance it (Sears, 1966)," it is necessary to identify just what those behaviors are and to predict them.

Much of the liturgy and pomp that has accumulated under the label of self concept research could be termed plausible rather than predictive. It has been demonstrated again and again that it is a simple matter for a hard-working and original person to find evidence suggesting the likelihood of a behavior's occurrence *after* the behavior has already happened. A good illustration was the recent case of Richard Speck. But surely it is a good deal harder to predict some *uncertain future* on the basis of relevant theory and evidence. This is because it is impossible to predict future events except by chance without understanding something of the workings of the system of events. Furthermore, while repeated unsuccessful predictions cast doubt upon the value of a construct there is no way of disconfirming explanatory statements involving constructs presented in an *ex post facto* fashion.

Educationally Relevant Criterions

Yet taken alone, successful prediction stemming from an explanatory system involving self concept is not wholly convincing of the worth of the construct. Recall that we are teachers. Our criterions or behavioral objectives are in large measure culturally determined and capable of innumeration. One of the major contributions of operant theory may have been that it forced us to list some of these specific criterion behaviors. For example, do we want our students to move directly from the busses into the building without unnecessary delay? Do we want our students to pick up copies of a valuable rather than a useless magazine during a free reading period?

While this concern for specific criterion behaviors perhaps accounts for some of the productivity of operant theory, the point to be stressed is that the path from self concept to educationally relevant criterion behaviors must be clearly established. If it was found, for example, that self concepts perfectly predicted the anxiety of a student when he participated in a reading class, it would still be necessary to show that either anxiety management is a direct responsibility of an educational system or that anxiety management concomitantly results in dropout management before self concept data would be as valuable to us.

Nominal Definitions

Yet while successful prediction of educationally relevant criterions must be demonstrated before a construct can be considered fruitful, lack of a commonly accepted stable definition results in such confusion and imprecision that confirmed prediction in one situation for one researcher does not cross validate. In order for results involving a construct to cross validate there must be some constancy in definition from one study to the next; similar observations being made by persons engaged in the verification and falsification of the same hypothesis. An observed tendency to permit variant and surplus meanings to accrue to a term has led to the conclusion that nominal definitions are basically unsatisfactory for hypothesis testing.

To illustrate the argument two nominal definitions of self concept will be cited. A dictionary of psychological terms directed toward potential consumers of research gives the following definition of self concept: "Ideas which one holds about the nature of his self. See Self." And Self is defined as: "See Ego," with the comment,"the self is that part of the personality which the individual feels is 'I.' It may extend far beyond the body, as when an individual comes to feel that his home and his children are integral parts of himself. Self-enhancement, self-protection, self defense, and self-concern are probably the major concerns of individuals (Wulfeck and Bennett, 1954)." None of the expressions in the last sentence are defined in that dictionary.

A comment on self concept is also given:

> The maintenance of favorable ideas about one's self, its adequacy, competence, and social value, is of utmost importance for high morale and social adjustment. Excessive striving for high self-esteem and a good self-concept may lead to a considerable amount of distorted and unrealistic thinking (Wulfeck and Bennett, 1954).

A second example of this sort of defining is found in Sears (1966) In Pursuit of Self-Esteem.

> Self-esteem is defined as possession of a favorable opinion of the self, or a favorable self-concept. In the child, judgments about the self are made in relation to problems and tasks of development.

> The self-concept represents expected success in the child's endeavors to meet these problems and tasks. The self-concept is complex, made up of many facets, with each facet differing in importance - or reward value - from the others. Expectancies have been learned for each facet, so that the individual can predict success or failure in connection with behavior that pertains to a given facet. These expectancies have been acquired and can be changed according to principles of learning. Various aspects of self-concept have properties similar to drive: to protect a good self-concept, one will strive hard (the energizing function) or will select those behaviors which preserve or enhance it. Self-esteem results when the child is able to predict success for important facets of experience.

Lack of clarity seems characteristic of these definitions. But more important, nominal definitions tend to treat self concept mainly from the point of view of what it presumably does rather than what specific empirical observations are correspondent with the term. The explicit connection between a logical semantic system and behavior in nature is lacking. Having been given these definitions, uncertainty as to what to look for in the world that represents evidence of self concept remains. It is a faith approach; certainly it is good to have a good self concept and awful to have a bad one.

Operational Definition

The alternative to nominal definition and a way to counteract some of its deficiencies is operational definition: the linking of self concept to empirical data. As Horst (1965) has noted with respect to the scientific method, the apparatus of experimental control is not its distinguishing feature but rather its requirement that observational data be used in making decisions about states of nature. Thus some have believed that "operationalism", where "every concept or term used in the description of experience (is) framed in terms of operations which can be unequivocally performed (Hempel, 1952)," could clean up self concept research. Specifying the operational criteria for "self concept" would include not only stating "symptoms" which could be ascertained by simply directly observing the person but also introducing observational instruments and related techniques. The exclusion from operationalism of simple direct observation without any manipulation was considered unduly limiting for a science, and, in fact, it has been suggested that several of the most useful concepts in science such as imaginary numbers can never be observed. Consequently, the operational method was broadened or "liberalized" to include recognition that rather than having every statement capable of verification or falsification through the use of observational evidence, a hypothesis cannot be tested in isolation and, therefore, the criterion of testability must be applied to "systems" of hypothesis. Secondly, the system of hypotheses "must be capable of being more or less highly confirmed by observational evidence (Hempel, 1952)."

Operationalism today can be thought of as demanding the utilization of empirical evidence that has bearing upon the acceptance or rejection of hypotheses involving the construct but in practice it generally means providing for some standard way of making empirical observations. In practice, it has usually led to the construction of a scale called an operationalization of self concept.

Although this approach stresses empirical referents for self concept, it by no means solves the problems of providing common definition and usage upon which a set of lawful relationships can be based. While it became possible to clearly point to the method for observing events explicating self concept in a particular study, the operational methods varied nearly as much from one study to the next as the previously discussed nominal definitions. It remained that while self concept might be "operationalized" in a study, its operationalization was often specific to that study and did not dominate in any way the original nominal "meanings" ascribed to it. What often happened in fact, was that an idea of how "self concept" functions based upon nominal definitions became translated into a series of questions asked as part of a scale or questionnaire.

Ambiguity Attributable to Technical Aspects of Observation

Thus far, I have been concerned with approaches toward definition of self concept as sources of ambiguity detracting from our efforts to develop a public, confirmable set of lawful relations involving self concept. At this point I would like to show that in addition to the ambiguity resulting from varied nominal and operational definitions of the same concept, other technical aspects of the experimental situation not commonly treated as part of "definition" influence the meaning of self concept.

A scale which is used as an operational definition of self concept is considered to possess definitional properties and the score obtained through its use summarizes the definition. When administered, this scale should yield summary scores which show a variance, and we need to be sure that this variance is mainly attributable to differences in the people rather than error. In other words, we require that our scale be a reliable index. If our scale is unrealiable, the observed differences among scores may not be a reflection of differences in self concept as the scale defines it. Our assessment of a person's self concept using this scale is subject to measurement error. And of course even though self concept now has an empirical referent, the empirical observations become ambiguous to the extent that measurement error exists. Therefore, even if an operational definition of self concept is agreed upon, the discovery of changes or variations consistent with some theory, our major means of verifying hypotheses cannot occur unless the empirical referents can be reliably observed.

Ambiguity in the Results of Self Concept Operationalization Attributable to Irregularities in the Scales and Their Administration

A special problem in conducting research on self concepts of exceptional children using elicited verbal responses, our main method of self concept measurement, is the frequently encountered necessity for modifying scales and administration procedures in some way. Because exceptional children show disabilities in such areas as vision, hearing, reading, and attention special modifications of the scales and administration techniques are often made. Frequently, scales are presented through an altered stimulus mode. While the original may be designed for reading and paper pencil response by the person it may be presented in sign language, braille, or read aloud in an interview. Simplification of original vocabulary may also be practiced.

To the extent that these modifications introduce new sources of variation which are not attributable to self concept differences, our results become common equivocal. Friedman (1967), for example, has documented the effect of extremely subtle differences in experimenter presentation of a stimulus and their correlation with experimental results.

Before presenting suggestions for courses of action which should be helpful in generating better definitions of self concept and better research, let me summarize the difficulties which have been noted:

1. Nominal definitions of self concept found in the literature are diverse and frequently specify some hypothetical set of functions.

2. Operationalism has not provided a solution to definitional problems because these definitions vary from study to study and are often based on nominal definitions held by the researcher which stress function.

3. Unreliable measures may cloud self concept definitions since observed differences are attributable, in part, to error of measurement.

4. Modification of the "operationalization" necessary to permit research on exceptional children introduces another source of ambiguity in definition to the extent that these modifications correlate with total scores.

Recommendations

The following are a few strategies which may provide fruitful. Most of them call for a radical shift in our approach to self concept research and are relatively unique in their total rejection of the idea that self concept represents a "hypothetical state" of the organism. In general, they were derived from a social behavioristic framework as articulated in the works of George Herbert Mead, Charles Pierce, and John Dewey.

It may be advisable to abandon treating self concept as a hypothetical construct and instead consider it a class of verbal behaviors. Rather than developing a theory of self concept perhaps we would be better off developing a theory of self definitional verbal behavior. A great deal of energy has been expended attempting to answer the question of whether a particular operationalization gets at the "real" self concept. Since "real self concepts" are hypothetical, nominally defined states, the question cannot be conclusively answered. However, we can determine the predictive validity of various self definitions.

Stop treating self concept as if it were a "g" factor and begin systematic inquiry into variations consistent with: (a) role--e.g. reader, dancer, athelete, lover, (b) referent--"average Joe", special class student, siblings, Cassius Clay, (c) time--past, present, future. Previous research by the authors (Joiner and Erickson, 1967) shows that systematic differences in response to self concept scales can be produced if the reference perspective is altered. For example, when no reference perspective is specified blind students seem to be comparing themselves or evaluating themselves in terms of the yardstick of other blind students. Suggesting a sighted referent produces quite different results. It should also be clear that students who define themselves as capable statisticians do not necessarily define themselves as capable atheletes and vice versa. Dimensions are clouded when items in scales are inadvertantly getting at varying role behaviors and demands, referent perspectives, and times in the life of the respondents.

If scales are to be used, some attempt should be made to dimensionalize the items which now exist so that the factor structure might become clearer. Actually, there are two ways of going about this. One could conduct an empirical factor analysis of the items in the major self concept scales in use today and then cross validate the factors. Or, an a priori factor structure could be hypothesized on the basis of some theory and subject to test (Nunnally, 1966). Either strategy would be costly in terms of the need to test large numbers of subjects on large numbers of items.

Since the emotionally handicapped may be especially "suspect" as subjects for research demanding the use of "obtrusive measures," greater attention should probably be given to recording and classifying their self referent statements which occur in spontaneous speech. Pay more attention to the verbal behavior itself as opposed to what lies beneath it.

Consider the source of self definitional statements. It may be of great value to determine who the significant others are in the life of the student because previous research (Brookover, Erickson, and Joiner, 1965) shows that self definitions are quite consistent with the perceived evaluations of these others. Who are the people in the life of the emotionally handicapped child that might be providing him with definitions of himself? And since it has also been demonstrated that self conceptions are most effectively altered through the planned intervention of these significant others (Brookover, Erickson, and Joiner, 1965) the question is raised as to how to get the teacher to be perceived as more central in the life of the student. Once perceived as a significant other it is more likely that the teacher will be able to influence the student's self definitions.

Consider the proposition that preference for a state is not necessarily equivalent to commitment to obtaining that state. Often it appears that a researcher believes that there is something inherently harmful in a discrepancy between what a subject says he would prefer "to be" and what "he is." However, it is often overlooked that preferred states such as ideal selves are reflections of the norms of the society and ideals of the culture. And although completely aware of them, many Americans do not fulfill them. Because a raw discrepancy between ideals and reality is so intimately connected with cultural values and the individual's social context, a measure of the value that a person places upon an ideal contrasted with the value placed upon his perceived present state may be quite useful. Presumably, larger positive value discrepancies reflect greater commitment to some ideal state. This is a Bayesian point of view.

Stop acting as if it had been established that self concept is a necessary and sufficient condition for the elicitation of a particular class of behaviors. We have repeatedly observed that "poor" self concepts of academic ability interfere with academic performance mainly because they limit a person's choice (Brookover, Erickson, and Joiner, 1966). Students who perceive themselves as poor readers are less likely to attempt reading if given a choice situation. On the other hand, viewing oneself as a skilled reader is no guarantee that one will take time to read the homework assignment. In other words poor self concepts are more predictive of behavior than good ones. Self definitions of "being able" permit related behaviors to occur but other contingencies then become important before the behavior emerges.

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PSYCHODYNAMIC MANAGEMENT TECHNIQUES

by

Henry D. Fishel

Increasingly in recent years we have had to come to the realization that aggression may well be a human instinct, an instinct which may be raised or lowered by certain forces, but an instinct which persists nevertheless. Konrad Lorenz (1966) and Robert Ardey (1966) have given us brilliant insights about both aggression and territoriality.

At the Phoenix School, a day school for delinquent adolescents, with which I was associated for three years, we used a variety of measures as management techniques. These measures were arrived at in a pragmatic way--what worked was used; although our pragmatism, of course, was influenced by our experience and our knowledge.

We found that the very severely disturbed, court referred, 14 to 17 year old youngsters with whom we dealt, most of whom were either Jewish, Negro, or Puerto Rican, could be "managed" to the extent that their basic self esteem and their dignity were least interfered with.

These youngsters, coming from severely disturbed homes, where they were either hated or demasculinized, or both, had a strong need to guard themselves against "invasion" from the outside and most of them had reacted to this threat of invasion by the erection of a delinquent facade. They would strike with intensive aggressiveness at anyone who threatened the self which they felt to be in such danger. An analogy to Ardey's work is apparent (1966). These youngsters were defending with intensely heightened aggressiveness the territory of their own selves. To stem this aggression by the usual restraints, or by counter hostility was completely futile. Only as the threat of invasion was lowered were we able to lower aggression. We could, however, not eliminate it and came to believe that aggression is in all probability an inevitable and even desirable state of the human condition.

No school or institution can ever use a unified approach. However, a consensus among the staff of the Phoenix School did develop and the following methods were primarily used by the staff in the management of these very disturbed youngsters:

Inanimate Barriers. One of the simplest ways of preventing youngsters from doing something which you don't want them to is to make it impossible. If is often surprising how little we tend to rely on physical obstacles in our attempts to manage and control behavior. At the Phoenix School we found that they key and the lock were excellent control measures. If one doesn't want a youngsters to fool with lights, the best way to approach this problem is to install a keyed light switch. If one wants to keep a tool out of a youngster's hands there is no better way than a good closet with a strong lock.

Focusing on Aggression Proof Persons. Certain people can develop enormous capacities to withstand aggression. They can see a youngster's aggression as being so apart from their own life stream as to be without barbs (this does not mean that the aggression proof person is not sympathetic to the youngsters, but rather that he sees the aggression as a clinical event and not as something directed towards him). At the Phoenix School we had several such aggression proof persons who were highly resistant to aggressive behavior by the youngsters. When one of the adolescents became especially difficult, one of these people would intervene and the aggression would be focused on him.

Withdrawal. One way that a staff member could often avoid conflict with a youngster and a situation of acting out was to simply retire from the situation. A youngster who has a temper tantrum with no one around him, soon comes to perceive its useless and stops.

Appeal to Common Hazard. Ardey (1966) believes that aggression within any group can be limited when there is a common hazard which comes from the outside. The Phoenix School both in its original phase in which it was essentially a pilot project and later when it still struggled to establish itself had a number of such hazards. We shared some of these difficulties with the youngsters, especially at a time when they were hard to manage, and this played an important role in stopping them from acting out. (This phenomenon can, of course, also be explained by the older concept of identification.)

Food and feeding. Many of the youngsters, even those coming from relatively middle class homes had often been not only emotionally deprived but physically deprived. We found that providing food and other essentials, such as clothing and an allowance, did much to lower the children's aggression. Provisions were unconditioned and not rewards for good behavior.

Fondling and body contact. It seemed to us at the Phoenix School at times that the kind of aggression we saw was not purely composed of hostility, but included a considerable longing for bodily contact. The fact that aggression, contact hunger, and sexuality seem to be closely linked in human beings became very apparent to us at the Phoenix School. This is, however, a fact which still does not sit too easily with most middle class Americans, and many of our staff found this an especially difficult area.

Distraction. Distracting a youngster during periods of aggression was attempted at times but worked less well than many of the other measures.

Insight. Relatively late in treatment we were able to give some of the disturbed adolescents help in understanding how badly they really felt about themselves and how their feelings came about through the disturbed parent child relationship, or through other forces which crushed self esteem. From this we were able to go on to an examination of the forces in the unconscious which contributed to aggression. Part of insight was also for the youngster to understand that his "reason" for being aggressive was often a subterfuge. Our society taboos aggression so strongly that most people have to invent elaborate rationales for their aggression, as random aggression, or aggression which does not make sense (if not for an immediate cause or reason) is very unacceptable.

The management techniques we employed were, of course, facilitated by the fact that we had a staff which at times numbered as many as eight (not everyone was full time) and which was dealing with less than fifteen children. However, we came to feel that the methods which we used were also applicable in part in situations where the staff to student ratio would be less ideal.

There should be a word of caution about lowering aggression. Many feel that aggression is largely instinctual, perhaps determined natively in each human being, but apparently heightened by invasion of geographic or psychological territory. Unless the sources of aggressive behavior are lowered or diminished, inhibiting the aggression almost always results in depression. Our two most aggressive youngsters, those two whom we eventually could not work with because they presented too much of a risk to the life and limb of the staff, were also the most depressed. Whenever their aggression was too much interfered with or inhibited, often even though the particular methods which we used worked, they would sink into deep depression. This depression was so intolerable to these adolescents that they would inevitably return to their former aggressivity. Cultural factors may play a role here. It may well be that the more typically middle class neurotics or psychotics have learned to live with enormous amounts of depression.

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ABSTRACT

A CASE OF DESENSITIZATION AND TUTORING THERAPY

by

Daryll Bauer, Jr.

This paper examines the learning difficulties of a young boy in the

area of mathematics and the effectiveness of a remediation program based upon Wolpe's theory of desensitization.

Peter was initially brought to our attention in December of 1966. He was considered a bright child but was currently failing seventh grade mathematics. An examination of his case history revealed an excellent environmental situation with normal development until he entered school.

Our department conducted a thorough psychological evaluation on Peter in March of 1967 which indicated a phobic reaction in the area of mathematics. At the conclusion of the evaluation Peter expressed a strong desire "to be good in math," and with his willingness to cooperate with densensitization and tutoring therapy we directed our energies toward the attainment of this goal.

Six desensitization sessions were held from May first through May twenty-second. A hierarchy of situations was constructed and categorized according to Peter's report as to the degree of anxiety which each one produced. In each session a scene from the previously compiled hierarchy was presented for him to visualize. Each time this was preceded by these prior, less anxiety inducing scenes, which were given at the earlier session,

The tutoring phase began the first of June and continued through August. The first several sessions were directed toward the establishment of rapport between student and tutor. With the development of a positive relationship, mathematical situations were examined as they related to everyday living experiences. As the tutoring sessions progressed, math experiences were also taken directly from the mathematics text.

Peter's current behavior, as reported by his eight grade teacher, finds him a B to B+ student in a middle ability group. One case, of course, is not sufficient for wholesale advocation of desensitization therapy but it does suggest the value of researching this hypothesis.

This case study was conducted while doing graduate work at the University of Virginia.

VISUALLY HANDICAPPED

A DYNAMIC CURRICULUM FOR TEACHERS OF THE VISUALLY HANDICAPPED

by

Evelyn J. Rex

Webster defines dynamic as "pertaining to change," "forceful," or "opposed to static." The curriculum of persons preparing to work with visually handicapped children should adhere to all aspects of the definition.

The area of the visually handicapped has not been a static one. Recent years have brought considerable change, both in visually handicapped children and in the programs which serve them. If a curriculum is to be a dynamic one, it must show cognizance of these changes. It must change to meet changing needs.

Areas of Change and Need in Education for Visually Handicapped

It seems to me that there are four major areas of change and need which must be emphasized.

First, we have changed in the way in which we group visually handicapped children. We have moved from thinking of them as dichotomous groups of the blind and partially seeing to viewing them as one group, the visually handicapped. We have changed our definitions by adding a functional definition to the clinical one so long used. As we have changed in our thinking, the placement of children and the types of programs established have changed. Recent studies by Jones (1965, 1966) indicate a trend toward combination units which serve both blind and partially seeing children.

Second, visually handicapped children make greater use of their residual vision. The change related to this area has come about not so much through a change in children as through a teacher's changed point of view which encouraged use of residual vision. Increased use of low vision aids had added further encouragement. Studies by Barraga (1964), Ashcroft, Halliday and Barraga (1965), and Holmes (1967) have given direction to this changing area.

Third, the area of the visually handicapped shows increased concern for the child whose handicap is now described as a learning disability. Such a learning disability may be related to the visual process but can be attributed to a perceptual or cognitive disability rather than a sensory disability. The Bateman study (1962) is an indication that such children have been placed in classes for the visually handicapped in the past. Some are still in such classes. The literature reveals little of how the child with a learning disability related to vision is cared for in programs for the visually handicapped. One would suspect that the more sophisticated diagnostic and teaching techniques are being carried out by persons trained in the area of learning disabilities rather than in the area of the visually handicapped.

Finally, there are increasing numbers of visually handicapped who have additional handicaps. With some the multiply handicapping conditions are extreme, with others they are less. Change has taken place in the programs which serve multiply handicapped children. The residential schools have assumed leadership roles in establishing programs, often for the most severely involved. Programs designed specifically for the less involved are less well developed, particularly in the day school programs. However, some school districts are already planning and setting up programs for such children. Most are special classrooms for children who cannot be integrated into regular classes but who can function in a school program and who can live at home.

Role of the Teacher

With emphasis in these four areas there must be change in the role or function of the teacher of the visually handicapped.

Bowers (1963) indicated a need "to define more clearly the roles and functions of teachers and to develop the kinds of programs which will likely produce teachers capable of functioning well in a variety of settings (p. 385)."

In this statement lies the crux of the issue of a dynamic curriculum for teachers of the visually handicapped. What will be the roles and functions of such teachers?

Some teachers of the visually handicapped will fill roles in the residential schools. Others will fill roles in day school programs, in a variety of types of programs. Some will teach in programs which are not related to an educational organization but to a welfare, rehabilitation, or other type of organization.

Some teachers of the visually handicapped will teach children of preschool age. Others will teach children of high school age.

Teachers of the visually handicapped will be working with both blind and partially seeing. They should be equally prepared to work with the child who is educationally blind and the child with partial vision. Their preparation should not place emphasis on one area to the neglect of the other.

Teachers of the visually handicapped will assume a new role in working with children of low vision. In the past we have prepared the teacher to work with the child who uses braille or the child who uses large print. We have not placed sufficient emphasis on those who lie somewhere between the two groups. We have not emphasized the training of low vision. Research has shown us the effectiveness of such training and the tools to implement it. A major responsibility belongs to the universities to transmit this knowledge to future teachers and to provide the opportunity to put the knowledge into practice.

Teachers of the visually handicapped today find themselves responsible for children with learning disabilities of various types. One would expect a specialist in the area of vision to be especially knowledgable concerning a learning disability related to vision. However, if the teacher's preparation has stressed lack of vision, the opposite may be true. The teacher of the visually handicapped must be prepared as a specialist in vision with the ability to work with the child who lacks some or all of his vision and with the child who has vision but lacks the perceptive or cognitive ability to use it. Curricula of teachers of the visually handicapped must place some emphasis on teaching the child who falls into the latter category.

Increasing numbers of teachers find themselves working with children who have a handicap in addition to blindness. What knowledge do teachers have of other handicaps? What knowledge do they have of the educational adaptations which are necessitated by the handicap and by the combination of the handicap and visual impairment? Some of this knowledge must be made available in the future teachers' university preparation.

It is impossible to enumerate, even to anticipate, the many other facets of the role of the teacher of the visually handicapped. It is almost as impossible to fully prepare the teacher of the visually handicapped for the many facets of the role. A dynamic curriculum is needed.

Changes in Special Education

The comments made thus far have been concerned with needs and changes specific to the area of the visually handicapped. We cannot ignore needs and changes within the general area of special education.

The role of the special educator is changing. The role is rapidly becoming one of diagnostician and tactician (Schwartz, 1967) encompassing the broad area of special education. Such a person thinks less in terms of medical categories and more in terms of educational categories. Such a person needs preparation with a more generic base, a core curriculum of special education. Such a curriculum should be a dynamic one for teachers of the visually handicapped.

It has been said that there is nothing new under the sun. A generic approach or a core curriculum has long been advocated for teachers of the visually handicapped. In 1961 participants at a workshop sponsored by the American Foundation for the Blind (AFB, 1961) established three areas of requirements in the preparation of teachers of the visually handicapped. They are as follows:

Area I: An introduction designed for an overall orientation to the fields of exceptionality

Area II: Preparation in curriculum, methods and guidance in relation to the larger program for the entire field of exceptional children, with provisions within the courses for specific application to the teaching of blind and visually handicapped

Area III: The special skills requisite to the field of the blind and visually handicapped.

Professional standards established by the Council for Exceptional Children in 1966 is in agreement with the AFB requirements.

Most universities preparing teachers of the visually handicapped have incorporated Areas I and II in the curriculum. Most of these curricula could take a more generic or core approach if emphasis and direction of Area II were changed somewhat. Most curricula satisfy the requirement "in relation to the larger program for the entire field of exceptional children" by providing one or two survey type courses and parallel courses in the various areas of exceptionality. If emphasis were placed on the work "within" as suggested, the curricula would include many integrated courses within the area of special education. Such courses would provide the teacher of the visually handicapped with the needed knowledge to work with children with additional handicaps and with learning disabilities.

The Special Education faculty at Illinois State University is presently working on a curriculum based on a core approach. The curriculum in Table 1 proposed for the area of the visually handicapped incorporates the suggestions and thinking of the staff. Except for the special courses in the area of the visually handicapped it is a curriculum which could be offered to all future teachers of exceptional children. Specific skills necessary to teachers of the visually handicapped are added to the basic core curriculum.

Table 1

A Proposed Curriculum for a Five Year Program
in the Area of the Visually Handicapped

Illinois State University

I. Communication
  A. Communication Skills
    1. English
    2. Fundamentals of Speech
    3. Speech Correction
    4. Linguistics *
    5. Language Development *

II. Social and Behavioral Sciences
  A. Sociology
    1. Introduction
    2. The Family, Community *
    3. Juvenile Delinquency *
    4. Social Disorders *
  B. Psychology
    1. General Psychology
    2. Normal Child Growth & Development
    3. Abnormal Child Growth & Development (The Exceptional Child)
      a. Physical
      b. Intellectual
      c. Social
      d. Emotional
    4. Normal Cognitive Development *
      a. Motivation
      b. Learning
      c. Perception
      d. Personality
    5. Abnormal Cognitive Development (Psychology of Exceptional Children)
    6. Mental Hygiene
    7. Behavioral Disorders in Children *
    8. Measurement

III. Humanities
  A. Literature and Foreign Language
    1. Foreign Language (Optional)
    2. Literature
  B. Fine Arts
    1. Art Activities for Elementary Schools

(Table continued)

Table 1 (continued)

        2. Music Activities for Elementary Schools
        3. Art and Music Activities for Exceptional Children
    C. History and Philosophy
        1. History (General)
        2. Historical, Philosophical, and Social Foundations of Education
        3. Historical, Philosophical, and Social Foundations of Special Education *

IV. Natural Sciences and Mathematics
    A. Biology
        1. Functional Anatomy
        2. Physical Defects *
        3. The Eye
    B. Geography
    C. Mathematics
        1. Basic Concepts of Mathematics

V. Physical Education
    A. Activities
    B. Physical Education for Exceptional Children

VI. Methodology
    A. Elementary Curriculum
    B. Curriculum for Exceptional Children *
    C. Teaching of Reading
    D. Teaching of Mathematics
    E. Teaching of Science *
    F. Teaching of Social Studies *
    G. Teaching of Content Subjects to Exceptional Children *

VII. Visually Handicapped
    A. Introduction to the Visually Handicapped
    B. Education of the Visually Handicapped
    C. Braille
    D. Advanced Braille
    E. Mobility

VIII. Practicum Experiences
    A. Laboratory Reading Methods
    B. Analysis, Diagnosis and Remediation of Reading Difficulties *
    C. Observation and Participation of Normal Children
    D. Observation and Participation of Exceptional Children
    E. Student Teaching or Internship

*Indicates courses not presently in curriculum of the visually handicapped.

The proposed curriculum is intended for the undergraduate student. It incorporates the General Education and Professional Education requirements of our university. The additions to the curriculum would be Special Education requirements. Many of the Special Education requirements are taught outside the department. The program is a strong interdisciplinary one and is moving toward greater stress of the behavioral sciences. Perhaps the most challenging aspect of the curriculum to the staff, and hopefully of comparable benefit to the student, is the opportunity for the staff to work as a team with other members of the department and with members of other departments. For example, as the student takes Child Growth and Development--taught in the Elementary Education Department--he also takes Abnormal Child Growth and Development in which members of the Departments of Special Education, Psychology, Biological Sciences, etc. work as a team.

Eventually the requirements in the special area of the visually handicapped may undergo further change. The present concern, however, is to enhance the curriculum aside from the special area. Changes in the special area will likely come within the content of the courses rather than the courses themselves. For example, greater emphasis in the training of residual vision is planned.

The curriculum is proposed as a five year plan. It is not possible to include all the necessary preparation in a four year program.

Time does not permit greater detail of the proposed curriculum or of the topic. Areas such as proposed practicum experiences are topics deserving of a separate paper.

The proposed curriculum undoubtedly has weaknesses. It is hoped that they are outweighed by the strengths and that it will prove to be a dynamic curriculum for the visually handicapped. If not, we must charge ourselves with further change. We cannot remain static, but must continue to seek a dynamic curriculum.

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ABSTRACT

MULTIPLY IMPAIRED BLIND CHILDREN: A NATIONAL PROBLEM

by

Milton D. Graham

Using a mail questionnaire, data were collected on 8,887 multiply impaired (MI) blind children. Most frequent second condition reported was mental retardation (80 percent of the sample). As expected, reading levels are far below chronological age expectancy.

General implication of the data are that for the estimated 15,000 such children in the US, much better early detection techniques are needed everywhere; better and more frequent physical diagnoses, much more specialized training to promote environmental control, and far better treatment and special educational techniques are needed. This means more and better prepared teachers working with other specialists. Experimental programs have proved that the potentialities of MI blind children are realized when high expectations and highly specialized programs exist. Such programs are costly but rewarding in their results. A national effort is needed to salvage the growing numbers of MI blind children in the country.

COLLEGE PREPARATORY PROGRAM FOR VISUALLY IMPAIRED STUDENTS

by

Walter C. Fitzgibbon

During the five week first summer session of 1967, the Rehabilitation Division of the North Carolina State Commission for the Blind, and Western Carolina University cooperatively presented a college program for visually impaired students. A member of the Commission and a member of the University served as coordinators. The former was responsible for the daily supervision of the program and the latter met responsibilities associated with broad planning, operation, and evaluation.

The purpose of the program was to aid visually impaired students in making the transition from high school to college. An attempt was made to provide, as nearly as possible within a summer term, the realities of campus life for a freshman. Therefore, the students had to meet the academic standards as established for sighted students, and only necessary adaptations, such as the reading of tests to totally blind students, were to be made. Further, the students had to meet the rules and regulations of the University and to control their own leisure time through the use of university recreational facilities.

The program was considered experimental in avoiding preconceived ideas about the implications of a visual impairment, in trying various ways of solving problems which might arise, and in adapting or adjusting the program as needed.

Participants

The North Carolina Commission for the Blind selected and sponsored 18 students who met their criteria for participation in the program. The students also met the freshman entrance requirements of the University or were expected to be able to remove deficiencies for full admission within a reasonable period of time. Of the 18 students, five were totally blind, four could read with minimal assistance, and nine had travel vision. There were ten females and eight males who ranged in CA from 17 to 23. Scholastic Achievement Test (SAT) scores ranged from 1200 to 474; the verbal scores of the Wechsler Intelligence Scale for Children ranged from 132 to 94.

Fifteen sighted students were employed to function as readers and as upper classmen advisors for three hours a day, five days a week. Weekend services were provided as needed. The aides were permitted to take six quarter hours of courses for credit. Of the aides, two were juniors and the remaining 11 were seniors. While most of the aides were preparing to be teachers, a wide variety of major areas of study were represented.

Four counselors who are faculty members in public schools provided vocational and some personal counseling to the students. They were carefully selected for their maturity from students enrolled in a practicum for counseling.

The Program

The visually impaired students enrolled in a five quarter hour freshman course for credit. The courses included biology, geography, geology, history and English. The students also participated in a two hour per day noncredit group session in which methods of study for visually handicapped students and career planning were emphasized. Consultants from specialized vocational areas provided their services during the activities of the group sessions. Personal and vocational counseling were made available in scheduled and nonscheduled conferences with the counselors.

Evaluation was by means of analysis of subjective data. The data included Logs which the aides maintained, periodical reports of the counselors, personal interview with all professors having a blind student in their classes, taped evaluative conferences, and evaluations of the program by all participants and course instructors. Academic achievement was evaluated through the grades received and through conferences with the students and instructors.

Results and Comments

A complete report of the program will soon be available from the Commission or the University. Some of the findings which may be of interest are related to physical facilities and mobility, to personal social adjustment, and to academic attainment.

In reference to mobility, there was need for little concern about those with travel vision after they have had a small amount of help for orientation to the campus.

For the totally blind, however, there was evidence of a definite need for more travel training in their precollege programs which should include familiarity with the use of a cane or, perhaps, with other travel devices. In the program being discussed, the totally blind students were able to travel reasonably independently after the fourth day on campus. Much of the travel independence appeared to be due to the amount and intensiveness of the work of the aides. Problems which arose sporadically throughout the program usually involved the students' becoming disoriented as they passed a large open area, such as an entrance to a parking lot. Another frequent problem, especially in the beginning of the program, was the inappropriate use of the cane to go down sets of steps.

There was no accident related to the use of the sidewalks, terrain, or streets. This, perhaps, gains significance when it is placed in the perspective of the University's location in a mountain area. There was, however, an observed undersirable tendency of the students to attempt to cross streets at any convenient place. The need for the use of crosswalks must be impressed upon them.

The concern of sighted persons about the amount of physical care visually impaired persons may require from roommates was existent at the initiation of the program. No incident during the program, however, would support further concern about housing the students. It is believed that the careful orientation to the dormitory which the aides provided did help avoid some problems. The lack of problems in care for the impaired, however, was related to the ability of the students to take care of their own physical needs.

Some of the students had never had experience in a cafeteria and were quite concerned about using it. The problems were resolved by having them request which foods were available and having them ask for more information about unfamiliar food. A sighted person usually carried the tray to the table. With this service, the use of a cafeteria need not be a frightening experience.

The aides were to function in "big brother or sister" type roles in order to help the students make the personal and social adjustments required for college life. Most aides, though, became attached to their students and wanted to make sure that they were successful in college. Some of the students indicated that the aides may have tried to be a bit too helpful and resented being given directions by them. It was observed, however, that some of the students who complained the most, especially those with considerable residual vision, also voluntarily sought the aides and spent up to three hours at a time discussing personal problems.

Most of the personal social problems of the students were mild and similar to those of sighted freshmen in being related to a generalized fear of college life and concern about being socially accepted. There were additional apprehensions which were related to the visual impairment--specifically the students were concerned about being treated as freaks or they were concerned that blindness would detract from their social acceptance. The most numerous problems were found among the partially sighted, especially among the females. In almost every instance, the personal social problems of the partially sighted were related to the visual impairment--some denied thet they had a visual limitation; others intellectually discussed their visual limitation but appeared to divorce themselves psychologically from the impairment. Other partially sighted students attempted to completely avoid association with the totally blind students.

Primarily as a result of the role of the aides, most of the minor apprehensions about social acceptability were resolved. In some instances the aides apparently helped the partially sighted to more accurately appraise their visual limitations for college life. Further, the relationship between the aides and the students permitted the discovery that several students possessed relatively severe personal problems which most probably will require prolonged and intensive therapy.

All aides agreed at the end of the program that, in their opinion, the students were better adjusted academically, personally, and socially to college life than the average freshman after five weeks on campus. The students indicated that they were pleased to have nonprofessional persons available with whom they could communicate and in whom they could confide. Therefore, it is suggested that much of the favorable adjustment of the students and success of the program may be attributed to the role of the aides.

All but one student passed the course. This amount of academic success is greater than one would expect since there was a considerable spread in the measured intelligence, degree of vision, chronological age, and SAT scores. The success of the students, apparently, was related to the desire of the students to do well. It may also be partially attributed to their being restricted to a five hour course which permitted them adequate time for study. The success of the students in this program as compared to the high dropout rate of sighted students who enter college with a full study load suggests that it might be advisable to permit visually impaired students a lesser study load for their first quarter or semester in college and provide more personal services such as those which were part of this program.

Academically related concerns of the students before the program included apprehension about having male instructors and the amount of work they require of students. In the program, no problems developed which were due to the professors. They cooperated well and made every reasonable attempt to provide adequate instruction for visually impaired persons.

Of course, it is recognized that the probability exists that the students will have professors who do not have empathy for the problems of a visual limitation. Most professors, however, will work with the students. Probably most significant in the student's success in the classroom is his informing the professor of his visual impairment as early in the course as possible. Several students, especially the partially sighted, chose not to and the professors were quite annoyed with them for not doing so.

It is most desirable that visually impaired students know how to use all specialized equipment before they enroll in class. Additionally, it is recommended that each student have, and know how to use, a typewriter. More severely impaired students should also have a tape recorder. With these pieces of equipment and a reader when necessary, visually impaired students have more than a reasonable chance to be successful--without them they are severely handicapped.

The students need to learn how to take notes and how to listed to a reader. With the development of these skills and the use of readers, most nonlaboratory classroom work is not a major problem. As a general guide, three to four hours of study per course hour of instruction should be sufficient to permit the student to meet most course requirements.

Upon the basis of the success of the program, it will be continued this coming summer and will probably be an annual program. Some changes are being made but the basic purposes will remain the same. Additional attention is being directed to the collection of objective data as an addition to the subjective evaluation.

REHABILITATION AND PREVOCATIONAL PLANNING FOR VISUALLY HANDICAPPED YOUTH

by

Mary K. Bauman

Rehabilitation and prevocational training are often significant factors in the process of growing up, and in their truest meaning they take place over a considerable period of time. Rehabilitation is oriented toward giving the individual independence--not only vocational independence, but to some degree, social and emotional independence, and independence in terms of total management of personal affairs.

Steps in Rehabilitation

Some children begin to learn independence, and therefore take the first step toward carrying the responsiblities of a job and the responsibilities of adult citizenship, quite early. For them "rehabilitation" may appear to be a rather short term process concerned with little more than counseling toward a job choice, perhaps supported by testing and job tryouts, training for that job, and placement in it. Even this can be a fairly long and complex process.

However for many children, and especially for many blind children, steps toward any type of independence come slowly and perhaps painfully. I need not review the too familiar catalogue of reasons why the blind youngster finds independence elusive or even forbidden. We have heard a talk on orientation and mobility as part of the pattern of services intended for the elementary or secondary years, but in fact all of us see many visually handicapped teenagers who have never traveled independently and for whom a very important step in rehabilitation is acquiring travel skills and the freedom to use them wisely.

Another major step basic to rehabilitation for many teenagers is acquiring and accepting a realistic view of themselves, their abilities and their potential. Some families and friends, and at times even teachers, seem to feel that they can compensate for a visual handicap by encouraging the blind child to believe that he has certain special talents. One of the favorite special talent areas is music, but there are others, depending of course upon what the partiuular child seems to like and to do just a little better than others around him. We talk to many students in their teens who firmly state that they expect to have a career in music, or perhaps in foreign languages, or in writing, and assure us that they have special talent in the named area. To our amazement they believe this even when they have less than "A" grades in the subject in school. I talked recently to a boy who unhesitatingly stated that while it was true that he was blind God had given him musical talents especially in the area of composition. He explained that he can sit at his piano and tunes "just come to me" so that he can sit and play for hours. Unfortunately, he has not learned braille music so, he explained, he cannot write these compositions down. What he does not realize is that most children who have learned anything about playing a piano have his talent, and to the distress of their parents often prefer such improvisation to the piano practice required for real development of musical skill.

The realization that these "talents" are far from special and, still worse, that no one will pay for them is one of the sad but necessary steps in growing up and in rehabilitation, for, until the individual's mind is disabused of such daydreams, he is unlikely to come to grips with the choice of a realistic vocational goal. The counselor, the teacher, or the parent who helps the child to face this reality, yet leaves him with some sense of personal value and some positive feeling for a concrete and feasible plan for the future, has helped him in a very important prevocational step. This can be a rather emotional matter, and the youngster needs a kind and understanding supporter, but one who is absolutely honest.

Fundamental Skills Needed

Another significant step in rehabilitation at the prevocational level is acquiring real skills in fundamentals which will be needed in the chosen job, perhaps a real command of simple arithmetic so that it can be done quickly and with almost complete accuracy, perhaps a real command of spelling or of typing or of braille. The particular skills which are important depend on the vocational goal, but for many children there is a huge step, not only in actual knowledge, but also in attitude toward accuracy, between what is "passing" in school (sometimes only 70 or 65 percent), and what constitutes enough accuracy to use the skill in the job. The dictaphone typist cannot succeed if only 65 percent of the words are correctly spelled or typed; the vending stand operator will soon lose his job if he gives correct change only 65 percent of the time.

Of course, there are people who just cannot seem to learn arithmetic or spelling, but it is surprising how quickly most children of normal mentality can attain a high degree of accuracy in the fundamentals, if they know such accuracy is necessary. The teacher who sets high standards and helps students to develop self discipline and pride in good workmanship is helping in rehabilitation.

Counseling and Testing

For most young people counseling is a very important part of the rehabilitation process, and it is often done almost unintentionally by someone who is not called a rehabilitation counselor at all. Every individual chooses his own counselor, and often it is not the person who is paid to counsel him or the person who is assigned to him by a state agency. The impressionable youngster picks up attitudes toward jobs and attitudes toward himself from many sources, but particularly from people whom he admires and who may not even know of his admiration or guess that he is patterning himself in their image. Quite apart from this kind of informal and unintentional "counseling," there is the long process of moderately planned counseling which consists of giving information about jobs, giving the individual information about himself and his abilities, and thoughtfully guiding the young person to bring these two kinds of knowledge together in a meaningful way. Teachers contribute a great deal to this, and of course the school counselor and the agency counselor build their whole jobs around this function. Perhaps the thing that seems most important is that counseling and guidance must take place over a long period of time and may include every remark in which a teacher, for example, implies a value for a certain kind of work, says this is easy and that is hard, this is interesting or that is dangerous, and this calls for originality or that is monotonous and repetitive. Beware of remarks which reflect purely your own emotions and prejudices; they may keep a child from considering a job area which is well suited to him. Try to speak about the world of work in terms of facts and remember it is a good thing some people want to do the jobs you do not like!

This brings us to the fact that giving information about the world of work is a very important element in rehabilitation, especially at the prevocational level. Visits to plants, agencies, etc., so that the young person may observe jobs in action, perhaps even talk with workers, are extremely important and should be arranged as often as possible. Career Days and similar activities which bring workers to students in school are growth experiences of tremendous value for most teenagers. Do not think that young people take these experiences lightly or quickly forget them. I have had young people quote with considerable exactness what Career Day speakers said two or three years prior to the time they were talking to me.

An important step in improving the young person's knowledge of himself is psychological testing, including measures of general and special ability, of interest, and of personality as it is pertinent to vocational adjustment. Even though some, if not all, of these qualities may be in flux, for interests and personality often change rapidly during the teens, the individual at least begins to see himself through impartial measures when is informed in a frank but sympathetic way of his test results. Obviously tests also help the counselor to see the child in an objective, impartial way and may disclose abilities, interests, or emotional problems which were not evident even in the relatively close contacts of a residential school.

State Agencies and Services

When the child has a visual handicap, or any other serious physical, mental, or emotional handicap, he is a candidate for the assistance of the state rehabilitation agency. However, in some areas, especially in New York City, the major counseling and guidance service may be offered by a private agency.

With minor variations dependent upon state policy, the state agency can offer ophthalmological and physical examinations and additional examinations by specialists if needed, physical restoration if it could be helpful, psychological evaluation, vocational and personal counseling, appropriate training including college and even graduate school, reader service if the child cannot read for himself, books and supplies, and finally placement or aid in finding suitable employment. This rehabilitation service is not only available to the teenager but will continue to be available throughout the individual's working life if he should lose his job or have good reason for changing employment.

It is extremely important for the teacher and/or school counselor to know thoroughly the service offered by the state agency and to bring the child into contact with that agency at the earliest time possible within the regulations of the particular state. The child and his family may not be aware of these very extensive services. School staff should know them, should know just what they can offer so they do not mislead the family into expecting what cannot be given, and should get the student and the agency together--not merely give an address to the child and leave it to him. Furthermore, the school should be able and willing to give the agency appropriate information not only about the basic school record and extracurricular activities of the child, but any available test results and comments by teachers and other staff which could bear upon counseling of the child. These help immensely. In other words, it is extremely important that the school and the agency work together for the benefit of the child.

In many states, additional services are made available at the prevocational level. For example, mobility training is offered, and sometimes this is part of a much larger training opportunity which includes other skills related to personal independence, job tryouts in a shop setting, and actual training designed not to make an individual proficient in a particular job but to enable him and his counselor further to evaluate his ability. This type of prevocational training, which frequently includes training in homemaking as well as industrial skills, not only contributes better understanding of specific job content but it shows the young person more nearly what the standards of speed and accuracy and good work habits are on a real job.

Many states provide a special course of training for college bound youth. Although the structure of this varies from place to place, it usually includes opportunities to assess and improve such fundamental skills as braille and typing, some experience in writing papers, using a library, etc. In some places this training is given during the summer on a college campus, and the high school student actually takes one course taught by a college professor so he has the experience of taking notes, taking examinations, and preparing a term paper. This not only assists the student and the counselor to evaluate his preparation for college, but eases him into the procedures and demands of college life so that he has less of a sense of shock when he goes to the campus as a fulltime student.

Goal of Rehabilitation

Although I have pictured rehabilitation as a long process, often affected by events relatively early in a child's life, and to some extent continuing into adult years when job changes may be necessary or additional skills are added to make job growth possible, we usually think of the rehabilitation process as culminating in placement on a job. This is where all of the daydreams, the general and specialized training, and the counseling and guidance are tried and measured for suceess in the cold practical light of job demands and, for the individual, of career rewards. There is no real rehabilitation unless the individual fits the job in terms of his ability, his training, his interests and at least such personality qualities as motivation, persistence, and being able to work with those around him. Nor is there any real rehabilitation unless the job fits the individual's needs for exercise of his abilities, opportunities to show growth and to advance, sufficient financial reward so that he is secure and can take care of his family, and such personal satisfactions as friends among his fellow workers and pride in a job well done. The employer must be at least reasonably proud of the worker, the the worker must feel reasonably proud of his job and of the way he functions in it. Everything which contributes to bringing the right man and the right job together is a factor in rehabilitation.

ABSTRACT

THE ORGANIZATION, COOPERATION, AND COORDINATION OF STATE PROGRAMS FOR VISUALLY HANDICAPPED CHILDREN

by

Robert D. Cain

The state of Illinois is on the threshold of entering a very comprehensive and mandatory statewide plan of special education which exemplified the organization, cooperation, and coordination of state programs for visually handicapped children. Legislation, which was passed by the General Assembly in 1965, mandates establishment of special classes for all types of handicapped children by 1969. The four year interim provides time for a well defined developmental plan to be implemented. The final outcome will be special classes provided for, either at the local school district level or through joint agreements composed of local districts within a county or counties.

Planning began with a census of all exceptional children. Each of the 102 counties within the state of Illinois are authorized by law to draw up a comprehensive educational plan. These plans are to be submitted to a seven member State Advisory Council for Handicapped Children for approval. The Council has two ex officio members which represent other state agencies. Approval of plans is contingent upon comprehensive programs using all available resources within the state.

Also included in the recent legislation was the provision for an Educational Materials Coordinating Unit to provide materials to the visually handicapped. This is a direct service administered by the Office of the Superintendent of Public Instruction. The Center, one of the first of its kind in the nation, has received supplementary support through a Research and Demonstration Grant from the US Office of Education. In addition to the directly library function, the Center is involved in the production of material, the establishment of standards for the production of material, and the certification of volunteers involved in this production. As a coordinating unit, it will ultimately be responsible for assuming the responsiblities of acting as a clearinghouse for information relative to the availability of services and material for the education of visually handicapped children and adults.

ORGANIZATION, COOPERATION, AND COORDINATION OF PROGRAMS FOR VISUALLY HANDICAPPED CHILDREN IN NEW JERSEY

by

Vahram Kashmanian

In the early nineteenth century, New Jersey did not follow the pattern of other populous states in the Northeast by establishing a residential school for the blind. Perhaps its being a geographically small state, with Philadelphia and New York City on its borders, negated the need for one.

As a result, all blind students from New Jersey were educated in neighboring states until 1910, when a program for blind children was established in the public schools of Newark. Soon thereafter, the New Jersey State Commission for the Blind was created. Since that time, day school programs have developed in New Jersey, through the cooperation of the State Department of Education, the Commission for the Blind, and local communities, to the point that the large majority of blind and severely visually handicapped students now attend their local schools.

This is made possible by a coordination of services by the Educational Department of the New Jersey Commission for the Blind, the State Department of Education, parents, local schools, doctors, social workers, psychologists, and others.

Placement Through Educational Department

The Commission's Educational Department begins to work with blind children at infancy and carries through higher education. Students are referred to us from many sources. Having worked with physicians for five decades or more, our educational program is widely known by the medical profession and we receive referrals from doctors whenever a child is examined and found to have a severe visual loss. Parents learn of our services and apply directly. School nurses make referrals upon discovering visual problems in the public or private schools. Referrals can come to us from almost any source, however an application for service by the parents or legal guardian is necessary for us to register and provide services.

Our referral system makes known to us most severely visually impaired infants. We have developed an ongoing program in the blind child's home which we feel is necessary for his proper development and growth. Approximately 20 of our counselors have preschool children and provide guidance and counseling to the parents. In addition we have diagnostic services to help us measure ability and social maturity. Medical services relative to eye care are provided to the child when the family is unable to meet this need. Our library keeps in stock preschool materials which are loaned or given to the child.

At about age four, nursery school placements are made for these children, and our instructors provide continuous guidance to the administration and teachers.

All this is important to us in helping us to know the child and give him the best possible base upon which to build his school experience. Our preschool program gives support to the parents and hope for their children's futures. It leads to the next important agency function--choice of a proper educational program. In New Jersey this might include any of the following: public school placement, residential school placement, special treatment centers, such as the Boston Center for Blind Children, Royer-Greaves, or institutional placement.

In determining proper school placement, the parents' wishes are considered, however educational decisions are made on a team basis by a group utilizing a medical examiner, a psychologist, a representative of the New Jersey State Commission for the Blind, a school social worker, and a learning disability specialist.

I will not pursue what happens to children entering programs other than public school, except to say that their progress is reviewed and, whenever possible, those so placed are returned to their homes and local schools.

Staff, Instruction, Materials

In most cases blind children enter kindergarten at about age six. It is felt that the additional maturity is an important factor in successful adjustment and gives our instructor a chance to begin reading readiness and instruction in reading, prior to entrance into the first grade. This head start gives the student the opportunity to participate more fully and comfortably in the regular school program.

Instruction is provided by one of 30 instructors, all of whom must certify as public school teachers and also as teachers of the blind. This certification is handled through the State Department of Education. Those who do not meet the requirements may be employed under provisional certificates which require that a small number of credits be earned each year until regular certification requirements are met.

Most of our instructors are assigned caseloads by areas and population. Some, in the sparsely settled south or northwest portions of the state, must travel long distances in visiting the schools or homes of their students. A few are specialists--one works primarily with high school guidance; another is responsible for our college program. Two work almost entirely with multiply handicapped younger children; one with the retarded blind in regular school programs, and one with those cases which are headed for institutions. We also have one instructor who serves as our coordinator between residential schools, our agency, and the students' homes.

In addition to the 30 instructors, our professional staff includes a Director of Educational Services, and four supervisors; a supervisor of preschool and elementary programs, a supervisor of secondary and college programs, a supervisor of our Textbooks and Materials Center, and an unfilled position of supervisor for the multiply handicapped.

Once a child has entered a regular school program, our instructors will see him as often as deemed necessary, consistent with the need to serve the total caseload. Of necessity, students who use braille as their reading medium are seen most frequently. Our instructors who provide the tutoring in this area attempt to get into the schools three or four times a week during those years when the child is first learning to read. They also teach the child braille math and see to it that he or she progresses, whenever possible, at the same rate as sighted classmates.

Our Textbooks and Materials Center works with a number of dedicated volunteer groups in seeing that the same texts used by the students' sighted classmates are made available in braille.

At about the fourth grade level, our instructor begins typing instruction and works with the child on an individual basis to develop this important skill, particularly important in the public school situations where teachers can't read braille.

Our instructor also works with the teacher in providing additional materials, models, and tools. As the child masters his braille and typing skills, the counselor visits with him less frequently. Each year, our instructor meets with the new teachers to explain our services, see that necessary materials are provided, and that the child is able to participate as fully as possible in all school activities.

Our Material and Textbooks Center makes available to the student two braille writers, one for school and one for home use. Also provided are two typewriters, and, when the students are old enough to begin to use recorded materials, one talking book machine and one tape recorder. The Center makes available materials in braille, in large print, on tapes and records, as well as any models or equipment which we feel would assist the student in his studies.

If we meet with difficulty or resistance at a local school level, our instructors try to explain to the local school officials how, with our assistance, these students will be able to succeed in the regular school program. However, we do occasionally have to use the good offices of the Child Studies Supervisor who is employed by the State Department of Education and serves all handicapped students, at the county level, in the 21 counties which make up the state. New Jersey law clearly states that diagnosis, classification, and placement should be so focused as to first consider the individual handicapped child, secondly other children, and thirdly the community in which the child lives and functions. This means that if it is determined that the best placement for a child is his local public school they must accept him despite any reluctance they might have. Fortunately, in most instances the children are able to make such good adjustments that resistance to having them fades away.

As the child proceeds through the grades and develops his skills, our instructor visits the class less often until, at the high school level, a braille student may be seen only occasionally. The whole objective is to make the student as self sufficient as possible.

An invaluable assistance to us has been a State Law which is known as the Beadleston Act. This provides for tutorial assistance for all handicapped students in the public schools up to one hour per day. Almost all of our severely visually handicapped students begin to receive this tutorial help in the first grade, and in one two cases it has even been begun at the kindergarten level. These tutors must be certified public school teachers, and the State reimburses the local school board 50 percent of the cost of hiring the teacher. These people work with our children in almost any area where there is an indication that he could benefit from a one to one relationship. With young children, this might involve how to use scissors, fold paper, work with any type of manipulative equipment, etc. As the child progresses through the grades the tutorial help is provided in areas of need. Our instructors will teach a child the Nemeth Code, however, if the student is having some trouble in math, a math teacher is hired as the tutor. This supplemental instruction is available to public school students through high school in any subject area.

Also, for older students the agency provides up to $400 per student in reader service. Either fellow students or teachers can be hired for this purpose. Since we feel an adult would be more serious and would be more likely to do a better job, we pay a higher hourly rate for adult readers. Since our Materials and Textbooks Center can only provide the basic textbooks, reader service is an essential for completing the short term assignments and doing research or library work.

Still another service necessary to a successful public school program is adequate psychological evaluation. We are very fortunate in having a psychologist with considerable experience in testing the blind on our staff. She tests most of our younger children. Our proximity to Philadelphia has enabled us to purchase the services of the Personnel Research Center, in doing IQ tests, tests of manipulative skills, interest inventories, and personality inventories on our older students. We make an effort to have each severely visually handicapped child tested once every three years.

While responsibility for the education of blind and severely visually handicapped students is a direct responsibility of the State Commission for the Blind in most instances, there are classes in seven of the major cities and responsibility and control over educational policies and procedures rests with those communities within the framework of State law, of course. The Commission does act in an advisory capacity toward these classes.

Other Departments and Programs

The Educational Department is one part of the State Commission for the Blind, which in addition has a Home Service Department, an Eye Health Department, and a Vocational Rehabilitation Department. The Educational Department works quite closely with the Eye Health and Rehabilitation Departments, since they give services which we can utilize in our work with our young people.

The Eye Health Department provides necessary medical assistance and/or prosthesis. The Vocational Rehabilitation Department is that arm of this agency with which we have the most frequent contact. All of our students, except those who end up in institutions, or recover enough sight so that they no longer need us, are eventually referred to our Rehabilitation Service. Those that go on to college continue to be registered with the Education Department and are served by an educational counselor and our Textbooks and Materials Center. Rehabilitation provides the all important money which provides services to a greater or lesser degree to practically all of our students who go on into higher education.

For those who go on to college, plans for Vocational Rehabilitation are worked out in partnership with the Rehabilitation Department; and, upon completion of training, the case is turned over to the Rehabilitation Department, where the final necessary paper work is done and job placement takes place. (About 95 percent go on and find jobs in line with their training and interests.)

Another important program provided in conjunction with our Rehabilitation is the summer program for teenage students. These summer programs have been run with three different types of groups: the college bound, academic but noncollege bound, and the slow learners. The objectives with each group vary, but all serve an important evaluative purpose, telling us something about the weaknesses in the students' backgrounds and giving us knowledge of areas which need concentrated attention. Vocational information and skills required in meeting the needs of day to day living are provided.

The Educational Department also runs a summer program for children between the ages of seven and 16. This provides an opportunity for us to observe the child in a setting outside his home in order to determine areas which need concentrated attention; dress, manners, and health activities can all be stressed here. In addition, a regular camp program with all that it involves in the way of pleasurable activities is provided. Tutorial help is available to those students in areas of arithmetic and reading.

Community agencies are also utilized in providing health counseling and social services.

In a short paper it is literally impossible to mention every way in in which we work with others in making this type of program work. Without our volunteer transcribers, the cooperation of the State Department of Education and the assistance of countless others it would be impossible to keep these young blind people at home and functioning in their communities.

ABSTRACT

PREPARATION OF TEACHERS FOR MULTI-HANDICAPPED CHILDREN

by

Philip H. Hatlen

Adequately prepared teachers of multihandicapped children must have concentrated and extended experience with children. It is evident that to achieve this many programs would need to reorganize their orientation. Realization of effective program change would necessitate altered requirements for candidacy.

These requirements could consist of: (a) credential at either elementary or secondary level, (b) experience in working with handicapped children in some capacity, and (c) course work in the general area of education of exceptional children, in growth and development, in patterns of learning in children, in psychological aspects or implications of impairments.

The candidates would then be involved in one year of study specifically directed toward:

1. First semester:
    a. observation, first four weeks
    b. internship, twelve weeks or the balance of the semester
    c. seminar, to accompany and be intimately associated with internship experience
    d. independent study
    e. electives
    f. counseling;

2. Second semester:
    a. student teaching, a minimum of 300 hours
    b. seminar, directly related to student teaching experience and often taught by the master teacher
    c. independent study
    d. electives.

There is nothing new or different about individual courses in this sequence, only the emphasis is different. Instead of requiring a number of lecture, methods, or skill courses, the emphasis is on direct work with children. With multihandicapped children, the whole child is not equal to the sum of his parts. Each one brings to the classroom a complexity of type, degree, and effect of impairment to learning. Concomitant is the necessity of interdisciplinary approaches within our categories of special education. It is time that we in special education who are concerned with multihandicapped children stopped looking at disciplines and began looking at problems.

THE ADDED DIMENSION TO TEACHER EDUCATION

by

Clarice E. Manshardt

Introduction

Generally education reflects tradition. It too seldom assumes leadership in bringing about change. To reverse this pattern in the field of teacher preparation programs for the visually handicapped is a challenge worthy of careful consideration and of much insight. One strategy to effect such a desired change would be to add or implement a critically needed dimension to these programs as they now are being offered.

In general, it might be said that pedagogy, practicum, and insight represent the three most commonly accepted dimensions of teacher preparation. For purposes of this presentation these terms are described: (a) pedagogy refers to those areas of preparation concerned with the theoretical bases for teaching, learning, and methodology, (b) practicum includes all laboratory or field experiences such as observation and directed teaching with their accompanying evaluative seminars, and (c) insight designates those preparation areas related to the understanding of individual differences, sound guidance procedures and the development of positive, accepting attitudes toward children. Basic as these dimensions are, it is proposed that their ultimate effectiveness can be significantly influenced and enhanced by the development of a fourth dimension, that of evaluation.

The Added Dimension Defined

Dr. Norman Topping (1965) president of the University of Southern California, pointed out, "It is indeed paradoxical that...universities spend millions in attempts to uncover secrets of the cosmos, but have spent comparatively nothing in dollars or time in taking regular stock of themselves...the value of their teaching program or the reality of their objectives (p. 5)."

The phenomenal growth in teacher preparation programs in the visually handicapped field is due in large part to the support through fellowships from the US Office of Health, Education and Welfare and provides further impetus to assessing practices and procedures. Followup studies on graduates are traditional and basic. However, to assume a leadership role, it is proposed that the fourth dimension, that of program evaluation, must include, but transcend this approach.

To accomplish this objective it is suggested that the following components form the structure of the evaluation dimension:

1. Provision of a basis for course improvement through followup studies

2. Exploration of methods for bridging the gap between theoretical constructs and practice

3. Identification of the college role in stimulating continued teacher growth.

Werdell (1966) points out that evaluation is without value unless accompanied by creativity in ideas and some means of implementation of them.

Course improvement and general program improvement can begin through application of both usual and unusual procedures.

Followup

The usual followup procedure involves the use of a mailed questionnaire and its subsequent analysis. A study of typical followup questionnaires reveals that information sought usually falls into the following categories:

1. Mastery of teaching skills related to subject areas
2. Familiarity with materials
3. Understanding of curriculum in both sequence and scope
4. Techniques for understanding and helping pupils
5. Relationship of educational procedures and philosophies of the special area to the educational field at large
6. Understanding and usefulness of theoretical constructs
7. Effectiveness of administrative and advisement procedures of the institution
8. Specific suggestions for program modification.

A more unusual procedure involves a series of planned discussions for graduates to talk over experiences and problems encountered in the field with personnel in the training institution. A questionnaire may be used as a part of the series. The Special Education Department of California State College at Los Angeles has utilized a questionnaire as a part of discussion meetings with graduate fellows in the areas of teacher preparation for mentally retarded and orthopedically handicapped. A modified form to be used with graduates of the visually handicapped teacher preparation program is appended.

A prior, more simplified questionnaire used both by teachers in training and some graduates of the visually handicapped program, demonstrated the value of the usual followup technique in that the analysis of the responses resulted in course revisions to avoid overlap, to enrich content, and to extend material resources. It is anticipated that the modified questionnaire and improved method of presentation will result in still further program improvement.

A further innovative followup procedure involves assigning responsible college personnel to observe a selected sample of graduates in action. Observational data is recorded and used as a basis for evaluation of the training program as well as constructive consultation with the graduate. Its effectiveness in terms of identification of needs, strengths, and weaknesses of the teacher preparation program overwhelmingly justifies the implied budgetary considerations related to staff time allotments.

Bridging the Gap

Evaluation should provide a vehicle both to identify gaps between theory and practice and some strategies for closing them. Often teacher preparation programs are plagued with realities of insufficient time and multitudinous requirements. Students in training have extremely limited exposure to the ideas and materials they are to learn. The critical question is how can this exposure be made to count both in thought and deed? Bruner (1962) suggests some meaningful approaches. First, the curricula of teacher preparation courses should be planned and taught so that the learner gains an understanding of its fundamental structure, rather than mastery only of facts and techniques. Closely related to this is the application of the technique of method of discovery enhanced by the encouragement of intuitive thinking through the nature and criteria for assignments and class projects.

Second, there should be an extension of the creative use of teaching devices which "aid in extending the student's range of experience, in helping him understand the underlying structure of the materials he is learning and in dramatizing the significance of what he is learning (Bruner, 1962, p. 84)." Sequential materials are needed, such as the Ashcroft and Henderson "Programed Instruction in Braille," which is an excellent example. Or, carefully guided laboratory experiences in observation of children and teachers at work, and in depth analysis of directed teaching experiences through regularly scheduled followup seminars are valuable.

Finally, those involved in the teaching of teachers need to internalize the idea that the teacher is not only a communicator but a model. The impact of this is highlighted when it is realized that studies show beginning teachers will teach as they were taught in college. Thus, the "model" in the preparation program is critically important.

Continued Teacher Growth

A third component of evaluation involves the extension of the college role in stimulating continued teacher growth. It is interesting to note that the recently announced Triple T Project to be funded in late 1968 or early 1969 under the Education Professions Development Act recognizes this needed facet. Its basic assumption is that preservice and inservice education are not separate concepts...that teacher training in and out of universities ought to be coordinated with teacher training in and out of the schools themselves.

Refinement of procedures for providing the "master teacher" with a clearer understanding of his role as it related to the total process of teacher preparation could provide a fruitful area of exploration. Planned meetings, on a continuing basis, of college personnel and those serving as "master teachers" could provide opportunities not only to define roles but to evaluate the strengths and needs of the preparation program as they are reflected in student classroom performance. Further, this relationship might well afford avenues of growth for the master teacher through an increased awareness of new techniques and the implications of research as related both to the visually handicapped and to the general fields of learning theory and behavior modification. Recognizing the practical realities of both teacher and staff loads, it is proposed that one such meeting each semester or quarter might be feasible and could contribute greatly to program improvement and continued teacher growth. Some exploration of arranging a worthwhile exchange between groups of teachers whose training experience is closely related in time, i.e. teachers currently in preparation and beginning teachers in the field, seems to hold promise. During the past three quarters at California State College at Los Angeles, prospective teachers of the visually handicapped have spent several planned days with "first year" teachers as a part of their observational laboratory assignments. Preplanning was done with the host graduates. Subsequent evaluation consisted of both joint and separate conferences with the two groups involved. Analysis of the conferences revealed a healthy growth in awareness of both practical problems being faced in the classroom and a genuine search for deepened understandings and application of theories and techniques. Discussions included such concerns as the unconscious operation of stereotypical thinking in relation to limitation of physical education activities for some low vision children, realistic expectations for blind students in drill type assignments and the teacher's responsibility for basic orientation skills.

The extension of college and local school sponsored workshops and institutes has been and will continue to be a major source of stimulation to teacher growth. Their range of content can be limitless but it is hoped they will continue to blend practical problems with scientific findings of research, basic learning, and behavior constructs. Thus they can provide impetus to self evaluation, stimulation to continuing intellectual curiosity, and deepened insight and excitement about the children and youth being served.

Conclusion

Education is not a matter of osmosis but must be earned and acquired through persistent effort throughout life. Indeed, it is a continuous and ongoing process. But evaluation, too, is a continuous, ongoing, and planned process. Often it involves many people and multiple approaches. Teacher preparation programs may be a particularly effective instrument in these processes when in addition to pedagogy, practicum and insight, the dimension of evaluation is added. Through such implementation it is hoped that an increasing number of teachers in the field, paraphrasing Gardner (1964), will reflect a capacity to remain versatile and adaptive and will more successfully resist being trapped by techniques, procedures, and routines, or imprisoned by their own pet theories, comfortable habits, and customary ways. Rather, it is hoped that they will be characterized by a certain flexibility of mind, a willingness to listen and learn, and eagerness to try a new way.

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SENSORY AIDS: RESEARCH AND DEVELOPMENT TRENDS
AND
THE QUESTION OF TRANSLATION INTO PRACTICE

by

Leslie L. Clark

Introduction

The purpose of this paper is to give a review of sensory aids research and development. In addition, an attempt will be made to organize these developments around the perspectives of the educator. The content of these developments is, of course, of primary interest; but the nature of the communication link between the researcher and the practitioner implied here is equally important and will become a most important focus of later discussion.

This communication link is influenced by a number of factors beside the content; among them are the norms which obtain in the respective domains of research and of education, in thinking and in work, the division of labor to which each domain is subject, and the network of communication links between them. This emphasis may seem strange to one not having at least a passing acquaintance with researchers and with educators, each in his own environment. If, for example, the main job of educators is to educate, that is, to make a student aware of the variety of bodies of knowledge atound him, and to provide him with a variety of experiences, then this implies in the case of the sensorily impaired child a number of consequences. Among them are that one must provide as many possible avenues of information input as one can manage, and that one utilize every resource to provide a meaningful transformation of the features of the sighted world for the child. This means an attempt to translate what we see into what an impaired child can hear or, to avoid overloading the auditory channel, into what he can tactually perceive and experience. It means our providing some means for the child to navigate in the world about him, and some idea of what it means to orient and to navigate. These are difficult tasks, and that fact may help explain some of the many failures of sensory aids to do what they were supposed to do, in the past.

The emphasis here is on the provision of options for information input to the child. No one sensory aid functions the same way for two individuals; indeed, we have found that personality factors, inherent sensory and motor capabilities, the tolerance for ambiguity, and intelligence-all are related to success with a sensory aid. To match intelligently the sensory aids we develop, and the children for whom they are designed, we are forced to keep in mind the distribution of these characteristics among the groups for which aids are designed.

It is in the context of these remarks that I should like to sketch some current efforts to develop sensory aids for the blind and visually impaired: first aids to reading, the mobility aids, and the role of the computer in both. In a second section of the paper some implications of these developments will be considered, the influence of the organization and nature of the researcher's and the educator's world on the conduct of the communication between them will be discussed and the question of the translation of research findings into educational practice will be presented.

I. Sensory Aids Research and Development

Reading Aids: Direct Translation

Devices or device systems which permit direct access to the printed page are of two general types: the direct translation device and the character recognition device. The former class has a rather long history, for in 1912, Fournier d'Albe developed the Optophone at Cambridge University, England. The original principle has been carried through many engineering refinements: it is simply that the output from an array, or matrix, of cells responsive to light is coupled to a bank of sound generators; when a letter or character appears in the field of view of the photocell array, a sound output is heard for that portion of the field which is illuminated, and no sound output is heard for that portion of the field in which the illumination is absorbed by a black surface. Thus, the tonal output varies, depending on which of the array of cells is stimulated at a particular moment of scan. The auditory display is chordal in nature, and indeed early attempts stressed the musical progression of tones from one cell of the matrix to the next. The latest version of the optophone class of devices was developed at Battelle Memorial Institute. Following its engineering refinement, a considerable effort was invested in the development of a training course of 200 hours to instruct users of the device. This aid-and when "optophone" devices are discussed, the Battelle device is probably meant today-has been used by a small group of persons in Ohio and Chicago; and it is currently undergoing evaluation under controlled conditions at the American Center for Research in Newton, Massachusetts. Reports from that Center indicate the very great difficulty in maintaining a subject population over time (not the least of the difficulties in evaluation of sensory aids. From the preliminary results available so far, it is probably safe to infer that optophone devices have a role as a personal reading aid for some persons, even though we cannot expect reading rates of much higher than five to ten words a minute when using it. This should be sufficient for reading checks, labels, and personal letters. In addition, this class of aid is light, compact, portable, and relatively inexpensive. For a skilled user it permits access to a fairly wide variety of type fonts and type writer prints.

Another type of direct translation aid is being developed at the Stanford Research Institute (SRI). This device also uses an array of photocells to sense the patterns of light and dark on the printed page, character by character; but the display is tactile rather than auditory, and consists, essentially, of an enlarged image of the letter outline. The interface is an array of piezoelectric bimorph reeds which vibrate in response to an applied voltage. To date, the action of the device has been simulated by a computer generating the control signals to the tactile display from a punched paper tape. This mock up has permitted the investigators to conduct a remarkable series of studies of the factors involved in tactile discrimination and information transfer, results which indicate clearly that previously held views of the limitations of tactile communication must be altered radically upward to account for the capabilities of that sense modality. The display is moved against the stationary fingers of one hand in a manner similar to the travelling news signs on the Allied Chemical building in New York. Note that it is possible, in this equipment cofiguration, to vary the number of characters appearing in the display field. This fact has let to a number of characters appearing in the display field. This fact has led to a number of studies of short term tactile memory, and to a seminal paper on a model of a sensory register which we plan to publish in the near future (Bliss and Hill, 1968).

SRI recently received a substantial grant to develop 50 prototypes of the bimorph display reading aid, using the most sophisticated techniques of fabrication available. The aids will be, it is hoped, the hand held size most desired, and will make extensive use of monolithic integrated circuitry. A further grant will then be sought for evaluation and training with the device.

This class of devices, that is, direct translation devices, requires highly motivated users. And the need for a "tonal memory" may have to be reinterpreted in terms of the model of the sensory register mentioned above. It is found, for example, that reading rates with tactile displays are reliably associated with intelligence level and with length of training; in part this last factor is confounded with whether the user is congenitally or adventitiously blind (the former having had longer practice with tactile stimulation to convey information). It is also known from more general studies that there is a relationship among the capabilities of the several modalities which may reflect some central cortical processes; it is not surprising, then, that if braille requires a character by character assimilation, as some informed researchers contend, that a similar process of assimilation of stimuli occurs in the auditory channel, using the optophone. The conclusion should be mentioned that the capabilities required of the user of these devices limit them to a small subpopulation of potential blind and visually impaired users; it is a conslusion we shall come back to over and over again, and one which has some rather general implications.

Reading Aids: Recognition

The other class of reading aids is that of the character recognition machine, or device, or system. These transfer the difficult parts of the interpretation of the output of a scanner to the machine itself, which is provided with logic and data reduction circuitry, and which produces an output of spelled letters, or a letter outline, or letter by letter braille. Such a machine (with several output options) has been under development at the Mauch Laboratories for some years; and a suitable spelled speech language (in which the letters are modified by removing "beginnings" and "endings" of letters on a tape recording, then removing most of the spaces between letters spelled out) has been developed by Metfessel and Lovell at USLA. These devices also permit rather high rates of reading-60 to 120 wpm (i.e., half the reading rate of the sighted), and the accuracy of recognition of various type font letters is high: 90 to 95 percent in the Mauch device.

The version of this device nearest the optophone principle is called the Visotoner, and it produces a nine tone code for auditory interpretation.

This type device is predictably complicated and predictably expensive. Cost estimates run between three and five thousand dollars if a run of a thousand or so is manufactured, which would be no small achievement, given the difficulties of production of sensory aids in the United States.

A similar device would result from an ingenious program in which a character recognition machine has been simulated on a computer at MIT; here an algorithm has been constructed for feature construction of the letters, and fed to a spelled speech output. It could be produced within two to five years, if a serious effort was made to do so.

Since speech is the most natural display for humans, many persons will ask, why not go directly from the printed page to speech? The answer is that this class of machine, one example of which (for memory and output) is now under development at Haskins Laboratories, is still more complex and costly than the character recognition machines already described. In fact, the heart of the device is the equivalent of a special purpose computer, which takes a Teletypesetter tape input to the processing program, compares it to a dictionary of words stored in the machine, and when a match is found, a prerecorded spoken equivalent of the stored word is read out. (Words not stored are spelled out through a subprogram in the computer.)

Many variations are possible on this equipment configuration, each variation adding to the cost and complexity of the device. For example, one might wish to incorporate optical character recognition at the input stage, so that the machine could read ink print directly; one could also demand that the machine dispense with a stored dictionary of words and depend on the generation of synthetic speech at the output. One practical advantage of the first variation is that a wider variety of ink print text fonts can be read, and input speed is enormous; a theoretical advantage of the latter variation is that as we learn more about synthetic speech, we should be able to make the output sound more and more like that of a normal human reader. The rather slow output of this type of machine (around 20 words per minute) is not a disadvantage, since one can keep it working 24 hours a day, record the output on magnetic tapes, and duplicate the tapes on request from a reader. There are other variations on the use of this device, or rather this system of machines, which will be mentioned in the discussion of computer capabilities. The readout rates from the system can be about 100 words per minute, but with some modifications the rate could easily be lifted from 300 to 500 words per minute without time compression. The cost of $50,000 to $100,000 would limit the machine to a central service facility. There is no reason to believe that not more than a few systems could be efficiently used, which will keep the price rather high, tend to make each machine a little more expensive than the last, unless several were built at the same time.

Talking Books

Reading aide for the blind and visually impaired must also include the talking book and large print. I shall go into the matter of large print type somewhat later on; I should like to mention here a few facets of recent developments in talking books. There is also a great deal of activity in the area of enhancing the availability of braille which may be of interest.

The US Library of Congress and the Royal National Institute for the Blind, in the United Kingdom, have both been developing tape talking book programs around tape cassettes. In this area, the British are considerably in advance of the rest of the world, for they converted their entire talking book program to the tape cassette system some years ago. Evolutionary developments in both countries have resulted in playback machines which are all solid state, rugged, reliable, adapted to the needs of the physically handicapped, and relatively inexpensive. Cassettes are now in production which are similar to the Phillips type used in smaller portable tape recorders, contain a book per cassette, and weigh less than a pound. Commercial portable tape cassette machines are now more suited to the needs of blind and multiply impaired users: they have evolved into campact and dependable machines for the use of the sighted.

The United States continues to be the largest user of disc talking books; but here too evolutionary developments have introduced many changes. With the development of suitable reproduction from inexpensive components, the practical utilization of eight and one-third rpm recordings became possible; augmented by the introduction of low cost disposable plastic discs, the new speed brings the talking book user nearer the world of the "journal parlant," so popular for the last decade in Europe. The increase in the number of magazines available to the blind reader because of these developments was foreseen by the noted conductor and acoustician Hermann Schercher. He proposed a daily newspaper for the blind in 1960, adapting techniques then common in Europe for producing paper discs.

Speech Compression

I have already mentioned time compression of speech, and this technique, which has captured so much popular interest, has a special relevance to an educator. The techniques for speech compression are well described in the literature (Foulke, 1967). Among the devices or methods used are the Eltro Information Rate Changer, the Varivox, the early Fairbanks machines developed at the University of Illinois, the use of a general purpose computer with appropriate programing, and harmonic speech analyzer designed by Bell Telephone Laboratories and under development at the American Foundation for the Blind. Of all these methods, only the Eltro device is a commercial practicality, although all the methods are used for experimental purposes. There are aspects of the use of this information compression method, highly relevant to educators, that are now coming out of behavioral research. The following conclusion seems fairly well established: presentation rates of about 275 words per minute are feasible for relatively lengthy listening to some types of text material, while rates of about 475 words per minute are usable for short periods by motivated students who have learned to listen. This appears to be the upper limit of the presentation rate at present for practical uses, but I have reason to believe, having used these equipments, that it is a limitation due in part to the state of commercially available equipment; that with training in listening, and with equipment much more distortion free than is currently generally available, and with better understanding of the process of hearing, it may be possible to attend to material presented at rates up to 900 words per minute or so without undue fatigue, at least for brief intervals. No one would want to read recreational material at that speed, of course; but then, no one would probably wish to use compressed speech tapes for recreational purposes.

Braille

The enthusiasm of many technologists, and the exciting prospects for application of technology in this area, have generated much activity around braille as a communication medium.

It is also of singular importance that two psychosocial projects are about to deliver new data to our fund of knowledge on the use of braille. One is at the special education department of San Francisco State College and deals with the factors associated with degree of skill in the use of braille by students; the other is a perceptual analysis of braille reading at the American Printing House for the Blind in Louisville, Kentucky. The most outstanding result of the latter study has been mentioned, namely reading rates of braille are intimately related to the intelligence level of the student; but another important conclusion of the study is that braille is recognized a character at a time (hence the need for a good memory store). This result has been corroborated by another study at the Tennessee School for the Blind.

The implications of these studies, and the nature of the population of braille readers, assume major importance in the discussion of implications of technological advances in braille availability enhancement.

Most of the advances to be mentioned are computer dependent, in the sense that the enhancement of braille availability is made possible through the computer, and in the sense that the computer widens and complements the use of braille. This is the reason that Professor Mann of MIT has spoken of "enhancing the availability of braille (Mann, 1963)." Some of the recent applications are:

1. The construction of braille displays for the presentation of braille code stored on punched paper tape, magnetic tape, and in optical stores

2. The construction (at MIT) to the production prototype stage, and the building of a few copies, of a high speed braille embosser with a flying shuttle that can operate at a speed of 16 characters per second, and that can be driven by a computer program or by a paper tape (or other storage medium) as a small scale braille duplicator, as a readout device, or to print a simultaneous ink print and embossed copy of text, using a coordinated Teletypesetter

3. The development of at least three prototypes of systems using electrified Perkins braillewriters and punched paper tape storage of the braille infor-

mation, thus permitting small scale braille duplication quickly and inexpensively

4. The development of a printing system to print simultaneously ink print characters and the braille equivalent above them, in Brazil

5. A Japanese typewriter that will print Grade one braille, also with the ink print equivalent under each character

6. An electric typewriter from IBM with 63 keyboard characters capable of embossing both Grade one and Grade two braille

7. A computer program, called DOTSYS, developed at MIT, which will permit the automatic transcribing of braille from compositors' tapes now widely used in the production of ink print books and magazines

8. The modification of both Honeywell and IBM computer line printers to permit embossing of braille characters, at rates ranging up to 900 lines per minute

9. The use of computers to permit semiautomatic braille transcription in the US, Denmark, Germany, Israel, and the United Kingdom

10. The beginning of computer programs to permit the semiautomatic transcribing of mathematics and musical braille codes

11. The proposal of a reading service for the blind which combines teletransmission of scanned ink print characters over telephone lines to a central computer, and the display of the braille or of the enlarged ink print equivalent tactually in real time, i.e., immediately

12. The proposal of a real time braille information system in a school, in which a typed or scanned input at a console remote from a central computer is converted to braille code and sent back to a high speed braille embosser next to the typist thus producing an immediate braille equivalent

13. The exploration of optimum braille coding for high speed production of even Grade one braille.

Basic to all these advances is that a machine readable equivalent of the ink print or the braille text is made available for further processing. Once this fact is grasped, it is easy to see that the variations on the basic theme are almost endless. Their practicality will depend on the need for the systems, their cost, and the availability in a specific location of the means to build up the required system. The computer, particularly through its ability to simulate devices without the need to actually build them, makes possible much experimentation that would otherwise take much time and money. In one advanced project at the Research Laboratory of Electronics at MIT, for example, a computer has been used to simulate parts of a reading machine. The use of ingeniously contrived algerithms of coded letter feature data has indicated it is possible to build a character recognition machine at a cost of $3,000 to $5,000 which would have an accuracy of better than 97 percent, and would operate at speeds in excess of 100 words per minute.

It is now clear to researchers that, potentially, it would be possible to provide universal and instantaneous availability of braille, through the use of computer programs, input from remote keyboards, and real time translation and processing of the ink print characters. It is thus possible to conceive of an "audible reprint" service, linking computer processing of the ink print analogue and the output of the Haskins type reading machine to prepare tape recordings in spoken English to send to the user via the mails or over telephone lines. A personal reading device system could link a small input reader, telephone lines for input and output, central processing, and the option of a tactile or spoken output.

There are other applications, implied by new knowledge gained from the design efforts now under way for third and fourth generation computer central processing units, which have relevance both for reading aids and mobility aids. As we gain more knowledge about how to handle these complicated translation and transmission tasks by ever more sophisticated means, there is considerable contribution to our understanding of the rather general principles of communication which operate in the visual and auditory channels of human beings themselves. Thus, by simulating the processes in living beings, we learn more about how animals actually process visual, auditory, and tactual information. In turn, this knowledge will allow a more exact appreciation of the requirements for extremely complicated systems of devices, and may lead some day to an actual visual prosthesis.

Those interested in the various configurations of components around a central time shared computer central processing unit should examine closely the excellent tabular summary of these prepared by Dr. Mann (1966).

Mobility Aids

Mobility aids have not had nearly so long a history as reading aids, at least as far as modern technology is concerned, although use of the staff and the sighted guide predate by centuries the use of special writing for blind persons. The modern history dates, in fact, only from the closing days of World War II, when the US Office of Scientific Research and Development sponsored a program in this area. The impact of that program has persisted to the present day. Major results center on instrumentation designed to detect and identify objects, determine terrain changes, and to sense the environment at a distance.

Although many inventors, especially individuals working outside of the knowledge of blindness and its peculiarities, have expected to produce a general solution to the problem of mobility for blind persons, no such general device has become available. Recent evaluative work on a few mobility devices, and on the individual differences in navigational ability, have given us some of the reasons why. Among these are the factors of personality variables, especially the ability to tolerate ambiguity, and the ability to organize complex information in a short term memory store, a constant for each individual tendency to veer from a straight line in travel, and the need and desire for mobility (Deatherage, 1965; R ley, Weil, and Cohen, 1966). The importance of the last item bears underscoring, and perhaps the best illustration for our need to think through the requirements of potential travelers is to cite Eric Josephson's (1965) tongue in cheek prediction that with out current enthusiasm to promote the mobility of blind persons, the beginning of the next century may see an incessantly mobile population of blind persons in a completely sedentary society. I offer this remark as one justification for a serious attempt to develop a theory of mobility, one which takes account of the needs of the populations involved in planning, and one which allows for a variety of these needs to be satisfied. The celebrated study by Lukoff and Whiteman at the Columbia School of Social Work has accustomed practitioners to the fact that only about one percent of the blind population currently uses guide dogs, and that perhaps two percent of that populations could potentially use them. What of the rest?

Not one of the mobility aids currently under development or evaluation--and there is none that has reached the stage of concensus among researchers as a fully practical aid--is designed to replace the cane or sighted guide or dog guide: most are best thought of as a supplement to these modes of travel. Research in this area has fully as many complications as in the development of reading aids, and the computer is helping to reduce the experimental work load by permitting the simulation of operation of specific devices under laboratory conditions.

Among the devices showing promise is the Kay ultrasonic aid, now in its second serial production run which is capable of object identification and detection. It can also be used as an environmental sensor. Its output is very rich in information; and for those with the skill and sensitivity to use it, it seems to provide a great deal of evaluation. But both in the US and the United Kingdom, the results cannot be considered conclusive. Its most enthusiastic defenders will claim that it can be used for fully independent travel, and at least one agency in the United States has opted for training of all its clients with the aid. An interesting fact which has emerged from the evaluation trials in the United Kingdom is that the Kay aid proved to be a valuable training aid in teaching mobility in familiar environments; after a period of use, the aid was turned off, or its use was suspended entirely, and students seemed to move more confidently along training paths than they would have while being trained for an equivalent period with any other aid (Leonard and Carpenter, 1962; Russell 1967).

Another ultrasonic aid showing promise is the Russel Path Sounder (Russell, 1967), which is designed to be used with the cane. The device gives early warning information about the area through which a person's head, shoulders, and upper body will pass along a travel path. Beyond six feet, the unit is silent; when an object is detected within four separate and closer zones, the device emits a signal characteristic of that zone.

Another system is that developed by Biophysical Instruments in Bala, Cynwyd, Pennsylvania (Benham, 1967). It incorporates three laser like emitters and receivers, aimed at head height, straight ahead, and the area ahead of the cane tip. All three, with their associated circuitry, power supply, and both audible and tactile displays, are contained within a lightweight cane; the whole assembly weighs a pound or less, plus the normal weight of the cane. The device provides a wealth of searching capability for the user. Its usefulness to the user, both in the laboratory and in the field, will be unknown until evaluations of the unit are completed. It is hoped that the evaluation will begin this year.

The fourth of the most promising devicc systems is that developed at Stanford Research Institute (Gardiner and Bliss, 1967). Like the older Kallman passive optical probe, it depends on ambient light, rather than on emitting and receiving pulses back from the environment (Kallman, 1954). But the Stanford device uses an extremely advanced vibrating mirror and mask matching arrangement in which an object imaged by the lens system gives rise to a maximum voltage when it is in focus. This arrangement allows setting of the device for object detection at specific distances. The output is auditory or tactile.

A variation of the Stanford device is the Polish Electroftalm, still undergoing evaluation in principle at the Pomerainian Medical Institute (Starkiewicz and Kuliszewski, 1965). This device, which also uses a lens imaging system, detects the image on a photocell array, and stimulates a matched array of tactile stimulators installed in a head mounted band: the stimulators act on the forehead to give a tactile equivalent of the patterns of light and dark sensed by the photocell detector unit.

Folding Canes

A lightweight and folding version of the standard cane has been called for frequently. Prototypes of at least four well engineered versions of folding canes are now under evaluation, one from Canada, two from Israel, one from the U S.

The Center for Sensory Aids Evaluation and Development of MIT has decided to produce 100 of one version of these collapsible canes, and to distribute them for field trials beginning in Summer, 1968.

Cane Tips

The question of more attention to cane tips has been raised also from time to time. Aside from one early and unpublished study in 1962, of cane tip materials from the engineering point of view, there does not seem to be any serious effort devoted to this question. Most investigators seem to feel that the best use of present day materials is being made with the processes and fabrication methods now in use.

"Artificial Vision" by Phosphene Generation

Finally, I should mention the use of patterned phosphene generation for a possible mobility aid. Unpatterned phosphenes have been with us since one of our caveman ancestors hit a comrade over the head with a club. Armando del Campo in Mexico, has developed an "amaurscope" that, it is claimed, stimulates the experience of vision (1965). Phosphenes are the flashes of light seen when you press on your eyeballs; they also occur when the visual system is stimulated by electrical currents. It has been found possible to elicit these flashes of light by stimulating electrically the trigeminal nerves of the face. This finding has been used for a highly experimental mobility program by researchers at the Lawrence Radiation Laboratories in California (Budinger, 1968). An image on an array of photocells is used to generate voltages of differing amplitudes and phase, which are applied to the trigeminal nerve. It was found that the patterns generated could be more or less reliably associated with repetitive features of the scanned environment, using a population of students from a residential school for the blind.

Visual Prosthesis

This study will deal very briefly with the question of an actual visual prosthesis: a system of instrumentation which is designed to give a visual experience bearing some relationship to the world around us. Proposals to provide such a visual experience, now under serious consideration by neurophysiologists and instrumentation experts, usually consider the possibilities either of direct input to the brain of an electrical analogue of a scene scanned by some optical transducer, or of an electrical array coupled magnetically or electrically to the visual cortex, but placed outside of the skull. It is important, however, to understand what is meant by "a visual experience." Even the most optimistic and informed estimates of the successful achievement of such a goal assume time periods of ten years and fiscal support in billions of dollars; and the visual experience which such instrumentation would give is unlike anything a sighted person could understand from his own visual experience. Indeed, it is impossible to state now what the nature of this experience will be; it is rather easier to state what it is not, namely, anything which a sighted person understands by the term "seeing." Think of a very low grade black and white television transmission with poor resolution, and much uncertainty about whether an image exists at all; add to this a period of two or three years merely to learn to interpret what this poor image may convey of the world--and you will have an idea of the most optimistic forecast informed scientists have of the prospect of providing a visual prosthesis. Finally, that is for granted that the match of man and prosthetic system must be highly selective, highly individual, and under constant supervision; that in all likelihood there will be many unforeseen difficulties along the way to achieve even the visual experience described; and that a great many equally informed scientists agree that it is likely that these difficulties will never be solved.

I think it clear that the picture which emerges gives us a rather poor prospect for the possiblity that our knowledge is equal to the task we wish to accomplish. What is most evident, indeed, is the pitiably small amount of knowledge we have of what actually goes on in the processing of signals in the visual cortex itself. No reasonable man can expect, therefore, that the problems of blindness and severe visual impairment are likely to be swept away by a deus ex machina.

Some listeners may believe that this description has been deliberately painted rather gloomily--that achievements in this field give one reason to believe that they represent a minimum expectation. No sober consideration of the evidence before us, including projections by informed researchers on the possibilities inherent in this line of research, however, can lead us to any other conclusion. It is abundantly clear from this evidence that we shall have to do our best to alleviate the deficits in the human experiences of blindness with the tools now available before us.

I expect that a forthcoming conference devoted to visual prosthesis research, to be held in New York City, will help to confirm this view. It may also help set aright the exaggerated expectations of many, based on enthusiastic but improbable inferences and projections from current trends in television techniques, advances in microminiaturization, and startling advances in our understanding of the physiology of vision. All these advances simply do not warrant the expectation that we are very much closer to artificial vision for all the blind now than at any time in the past.

II. Sensory Aids Research and Translation into Practice

Introduction

L. Armand (1968) of the French Academy quotes, in Realites, the comment made by L. Corbet, on the achievement represented by the launching of the Saturn V rocket last year, in which Corbet stressed the difference between a mere technical achievement and the confluence of many great technical achievements all at the same time, which in this case, made the launching an act of creativity. Corbet said, ". . .phenomena (thus) change their nature when they change their dimension."

I should like to make a distinction between two different kinds of technology, and show their relevance to the population of persons who would be affected by them. The distinction to be drawn is between the technology of the future, far and near, which is a "technology of the first estate," and which will be called "systems technology;" and a technology of the general purpose or special purpose everday type of aid, which is a "technology of the fourth estate," and which will be called "workaday technology," after the "Gebrauchsmusik" of Paul Hindemith. The purpose of making this distinction is modest: to emphasize that systems technology requires equipments and funding that go far beyond the capacity of the local, interested groups working with blind persons--and specifically far beyond the ability of teachers to use now in their classrooms. The workaday technology is already available (or about to be available) relatively cheaply, easily adaptable to special purposes, and with channels of distribution already in existence. There are borderline cases, of course, which no definition ever escapes.

For these distinctions to make much sense, however, they will have to be placed within a wider context; and it is at this point that I shall have to try and weave the strands I have deliberately left dangling in my previous remarks. The best approach would be to develop a full fledged model of the interaction found between the communities of research and of practice. This is, unfortunately, rather too ambitious a task for this study. I shall therefore take an alternative path: that of developing a series of descriptive remarks which hopefully will characterize each of these communities, and give some basis for understanding the kinds of interactions that take place between them.

To enhance understanding of this context, some figures on the population of children involved in the application of the two technologies to education will be included.

There are two points it would be valuable to keep in mind in this following discussion. First, the term "workaday technology" includes both typhlotechnology (that is, the applications of technology to solve the special purpose quotindinal problems of blind persons) and the application of general purpose technology (not developed for blind persons) to solve the quotindinal problems of blind persons. Second, "researchers" and "practitioners" will be discussed; "practitioners" referring to teachers of the blind & severly visually impaired.

The Community of the Researcher

The role and the activities of the researcher are governed by well known and generally accepted rules and conventions. The process of research has been described at length elsewhere (Graham and Clark, 1967). In general, the technologist strives to find solutions to problems which are common to groups of persons, the larger the groups the better. By doing so, he can reduce the cost of translation of a laboratory prototype to practice, and if he reduces costs far enough, he can also include more sophisticated solutions to the problem his technology solves. In his work, he is governed by the basic rule of scientific work, that science is public knowledge; thus he publishes the results of his work in sufficient detail that another equally competent investigator can achieve the same results he has achieved with the same means.

The constraints on the researcher or technologist are therefore:

1. That he strives to create a solution to a problem which has high specificity but also maximum generality

2. That his solution utilizes as much of the resources available in the nation as possible

3. That he proffer solutions which have applicability to the greatest possible number of people affected

4. That the cost of the solution represents what the users can afford, however paid for

5. That it represents an intellectual product acceptable to his peers

6. That his solution can be used within the social and psychological community of the ultimate users

7. That it represents an effort which can be accommodated within the division of labor extant in his own community of fellows

8. That it meets a need recognized clearly enough by the practitioner that he will find acceptance of what he proffers.

Technology is commonly regarded in terms of the devices or techniques by which human capability is extended. In this sense, the communication problems of the blind and severely visually impaired have exerted considerable fascination for technologists; as witness, we can note the development of the typewriter, the fountain pen, the ball point pen, the dictaphone, the phonograph, and the long playing disc. Yet it remains true that a thorough and realistic evaluation of the needs and capabilities of the aged, the student, the young adult, the congenitally blind, and the multiple impaired would show that the goals of the communication function are different for each of them, and therefore that the optimum technologies useful in the achievement of a goal of maximum human functioning for each of these subgroups may well turn out to be different.

The developments in both basic and applied research and development are difficult to initiate and sustain--and they require persistent and sustained efforts. Their selection, development, and evaluation are all dependent on prior value judgments made about the population to be served, the money to be invested in them, and the time and effort required, by whom, and for what persons affected. This implies, in turn, that we recognize that value judgments can be made either explicitly or, by default, implicitly (through disregard of research, lack of support of research, or failure to translate research into practice). To make these important decisions, we must know what needs research can meet.

The Community of the Practitioner

Scott (1967) has already indicated that the sources for the current organization of work for the blind stem from the beginning of the present century, when children who were blind, and the industrially blinded, were the two major groups in this population. It is important to point out also that the sources of education for blind children, in the goals of the educational system, in the organization of the teachers, and in the venue of education, were also determined by those facts. It is also true, as Scott notes, that turn of the century solutions to turn of the century problems are still being applied today with the blend. The organization of Special Education has not accommodated itself to changes in the population with the totally blind child, or the child with light perception only, for these were the children blinded at birth by opthalmia neonatorum: this was the population of blind children with which educators were faced at the beginning. Add to this the fervent atmosphere of social reform, a missionary zeal to provide access to the Scriptures, a Victorian atmosphere of morality and asexuality, and a pervading protectiveness toward the afflicted child--and one begins to appreciate the conditions under which the special concerns of educating blind children arose.

The special difficulties of communication, and the lengthy time required to teach the totally blind child a tactile code, resulted in an isolation equally complete between the child and his sighted peers, and between the teacher of the blind and the teacher of the sighted. Indeed, separate institutions for the blind were the rule not the exception. The dominant theme was that of limitation, not capability, and any success in overcoming these limitations was celebrated and rewarded. It was perhaps inevitable that a special corps of teachers developed also a community of interest separate from the rest of the educational community.

The Population to be Served

That this separation from the mainstream of educational life is a persistent phenomenon which has long outlived its usefulness is shown by available figures, first on the comparative rarity of blindness today, second on the levels of acuity which exist even within the economic definition of blindness (Scott, personal communications, 1968).

Table 1

The Comparative Rarity of Blindness Among Children

Age	Rate (per 1,000 persons)
0-21	0.35

18-24	2.9
25-34	2.6
35-44	2.3
45-54	6.7
55-64	12.0
65-74	28.0
70-79	33.0

The levels of acuity which exist among the population of children regarded as blind can only be guessed at, but we are fairly sure that no more than ten percent of the total school age population of blind persons is totally blind or has light perception only. Consider the implications of these facts; they mean that the organization of education for blind children, if unregulated, will impose the standards for educating children developed for blind children at the turn of the century on the entire population of those with levels of visual acuity under 20/200! On the one hand, we are dealing with a relatively small population of persons; on the other hand, that population is composed of those representing various levels of visual acuity, the bulk of which represents some useful vision. There is, perhaps, little reason to wonder why special educators are not prepared for peak periods of occurance of blind children (like the RLF children), why they have not consciously adapted to levels of acuity below 20/200 (but above total blindness) , or why they are not prepared to accommodate the wide variety of levels of remaining vision.

There is a further consequence of these figures that should be kept in mind: the rules applying to the application of systems technology do not necessarily apply to the application of workaday technology. For one thing, the benefits of the first may be universal, in the sense that developments aimed toward problems of the blind have a much wider applicability, with some variations of hardware involved; for another, they are often anticipatory of great social and technical changes in the society. The comparative rarity of blindness among children means, among other things, that the likelihood of the development of systems technology to meet their special problems, with technological solutions with high specificity, but low generality, is not likely to occur. This suggests that educators of blind children must look to the workaday technology to aid them, and we shall suggest how some of these developments might be utilized. We also know that at least some of the problems of blindness are unique.

What the Practitioner can Do

To summarize, we have, on the one hand, a group of researchers and technologists motivated by their perception of solutions to the problems faced by blind persons to see the possibility of application of the products of research and technology to these problems. There is a limit to the applicability of this technology, and to pass beyond it requires long range substantial funding and special competences; moreover the work is conducted within the "rules of the road" for the research process. On the other hand, we have an educational community which deals with a population only ten percent of which is prepared for the content and conduct of the methods used, by virtue of its characteristic impairment, to allow functioning in a sighted community. Indeed, the organization and conduct of the education received by this population is in general isolated from even the general educational community; there is an insistence on the individual uniqueness of each student; and the educational system is not generally equipped with means of communication with the agents of innovation the world of research. Yet there is a growing awareness of a feeling of dissatisfaction with this state of affairs, an awareness that the problems of the special educator are increasing with the growth in the population of economically defined blind children (a natural consequence of the overall population growth, and the lowering of the infant mortality rate), an awareness that the traditional methods of educating the totally blind are not suited to the majority of students educated in these programs and in these institutions. What can be done?

There appear to be two ways in which change might be effected. The first involves the maximum utilization of workaday technology in dealing with the problems of "blind" students. The second involves the creation of an attitude of experimentation and innovation within special education which will open channels of communication between educators and technologists, between researchers and practitioners. Following are some suggestions for application of current knowledge, and for generating more precise knowledge, in some of the areas of development, under the headings already used in describing the state of the art. This is not intended as an exhaustive discussion of the exciting possibilities open for exploration by the adventurous, but is intended to give some idea of what can be done.

Reading and the Use of Large Print

It is often only in the school setting that trouble with vision becomes apparent. But with the development of cheap and simple vision screening techniques, it is possible to think in terms of vision screening as a routine part of the school health evaluation program. The early detection and treatment of eye trouble (e.g. amblyopia) would go far toward preventing the growth of vision problems.

We know very little about the optimum use of residual vision. In increasing our knowledge of the capabilities of children to use remaining vision, the classroom teacher can be an invaluable aid. Indeed, our best knowledge of the optimal use of perimacular vision comes from the remarkable work of a classroom teacher of rare gifts, Miss Katie Siebart, in California.

It is certain that, if sufficient demand were created for it, it would be possible to generate large amounts of large type cheaply and quickly. The method is simply to take the compositor's punched paper tapes used in the printing industry to set type, and arrange for reading it into a computer with a high speed printer output and large type font. Compared to some other systems technological developments, this would be a relatively trivial problem. Whether or not the demand will arise depends in great measure on the perception by teachers of the use for the product. We can only advise, not coerce; the rest is up to educators.

If only ten percent of the total population of school children can be considered totally blind, then a combination of training in visual efficiency and the use of large print type appears to be an attractive possibility for providing direct access to the printed page. Consider that, of the number of blind children registered in school (about 20,000), the number of totally blind is about 2000; the number of multiply impaired somewhere between 500 and 1000; and the number probably having some useful vision about 10,000 to 12,000 (Goldstein, in press; Dauwalder, 1964). Since IQ is probably normally distributed among this group, and since braille proficiency is limited to those having IQ's above about 85, the number likely to benefit most from braille reading is likely to be about the same as those who are multiply impaired (Graham, in press).

Mobility

The potentialities for increasing the capability of children to move about in their environment is greatly increased with the provision of mobility training. Note that at present there is no provision for mobility instruction between elementary school and high school on a general scale; only experimental programs have been mounted so far. Moreover, present programs are hampered by insufficient funding and staffing. Possibly many teachers are not aware that some effort has been devoted to a readiness test for mobility training, which needs their further use and criticism (Graham, 1965). There is also a large gap between the need for mobility instructors and current plans for providing instructors; especially if this training is extended to all of the school population which can use it, then previous estimates of the need for mobility instructors are grossly inadequate (Schon, 1967). Also, the potentialities for training in navigation are enhanced by some of the electronic aids just beginning to become available, and whether or not they prove to be useful mobility aids--in this there is a question--there is little question that as training aids they may play an important role (Schon, 1967).

Compressed and Speeded Speech

Since so much of the world of the visually impaired is auditory in nature, considerable interest has been generated among teachers by recent developments in time compressed speech. One reason that interest has been stirred is the fact that these techniques are technologically sophisticated and elegant; their major disadvantage is that they depend on rather exotic machinery. Many teachers are not aware of the possibilities for more rapid communication with speeded speech, that is, the speech resulting from playing back tapes or discs at speed higher than the recording speed. Yet, there is a potential saving of one-third in the reading time of students, and as John Dupresspointed out, the point at which comprehensibility of both speeded speech and compressed begins to decline is about the same(Dupress, 1966). However, the cost of producing speeded speech is far less than the cost of producing time compressed speech, and the population likely to find this method useful comprises about 10,000 high school and college students. Evidently what is required is some aid in learning to listen, which is not a passive activity. How many students would now be prepared to benefit from increased rates of presentation, even were this generally available? The motivation to attend to the auditory cues available, and learning to listen with increased rates of presentation are both matters now open for investigation at every level. One of the most important factors we have to keep in mind is Dupress' (1966) insistence on a followup of students after the training program is over to see if they continue to use a learned technique or aid, or if the use of what has been taught decreases after the end of the training program.

Research so far reported using time compression techniques gives one some reason to urge further trails of the technique in the classroom. The promise held out by the use of time expansion of recorded speech (for the mentally retarded, for example) is also interesting: some recent results indicate that expansion may allow for the smaller immediate memory store of which these children are capable, and also for their decreased perceptualabilities and decreased ability to order input stimuli sequentially, as compared to normal children. But it is somewhat discouraging to report that compression of speech seems to leave them as far behind their normal peers as when speech is presented at normal rates. Furthermore, the Newsletter of the Center for Rate Controlled Recording reports a trial course in American History at the Hadley School, in Winnetka, Illinois (in both compressed and noncompressed versions) that indicated that students using the compressed version did not achieve grades which were very impressive, although they did somewhat better than those not using the compressed version of the course.

In discussions of the use of compressed materials, the matter of learning to listen is mentioned over and over. Perhaps it might be possible to think of learning to listen in the same way I have suggested that teachers try using electronic devices for mobility: that is, the use of learning to listen, whether by use of special devices or not, may be far more important than the fact that we have one or another device which permits compression of speech. An emphasis on this aspect of learning, now generally neglected in education, may afford one of the important points of contact between special and general education of children, and bring trials of compressed speech with blind children into the arena of general educational research on learning to listen.

In any case, it is clear that our understanding of what actually occurs in the compression of speech is just beginning to be extended. The limitations of the most widely available device for compression of speech (the Eltro Information Rate Changer) should not constrain us in our attempts to find even better ways to use time compression for better transfer of information in the auditory channel. For example, we have far from exhausted the utilization of style of speech to optimize compression by computer processing of the signal, and we know that dichotic listening may preserve the natural redundancies of speech, while altering their composition in the natural speech signal, thus increasing recognition rate while preserving comprehension. Furthermore, research on the transfer of information may depend auditorily on the results of research on the processes involved in our comprehension of auditory signals in general. We think now that when the channel capacity of audition is exceeded, some of the input cannot be extracted at the output, as is included from the Hadley School study. Much evidently depends on the extent to which we can pare away the successive layers of redundancy in the normally appreceived auditory signal, as has been described in the general literature by G.A. Miller and others, and still have enough left to recover the irreducible information content of the message. Certainly the results of Wietse's work with time compressed speech on visually impaired children reported in The Center for Rate Controlled Reporting Newsletter implies that more than the central processing involved determines the success or failure of a teaching program using such material (although central processes may well bound a limit to compression). Finally, our ability to use alternative devices to create compressed material ultimately depends on the extent to which out basic knowledge of central cognitive processes grows: enough evidence has been accumulating in the past few years to suggest some general model for the processing of visual, tactile, and auditory signals; the successful development of such a model would give us important insights into alternative methods of generating compressed materials.

One immediate consequence of the currently available devices to create compressed speech could be the increase in demand by teachers for samples with which to train students in learning to listen; and in opening the classroom for experimental investigation of the usefulness of compressed material for the blind, the severely visually impaired, the visually impaired--and for the sighted student, too. One of Foulke's studies indicated that there is no interaction between word rate for listeners and the reader's voice quality and reading style; evidently the factors making for comprehension at accelerated word rates are the same as those governing comprehension at normal work rates. (Foulke and Sticht, 1967). An additional reason for learning to listen is indicated if the desire is to optimize the use of compressed speech materials.

The Use of Currently Available General Purpose Equipment

I have suggested above that there are two ways in which change in the difficulty of translation of technology into practice might be affected: through the maximum utilization of workaday technology, and through the development of an attitude of experimentation and innovation. There is no better illustration of the payoff in the fulfilling of both these aims than in some recent attempts to bring home the already present materials that teachers can use here and now. I should like to report to you the result of one such experiment. One researcher became convinced that, in fact, many teachers of blind and severely visually impaired children were isolated from the mainstream of developments in the general educational field, to the extent that they were simply not aware of the aids that manufacturers made, which had immediate relevance to the classroom situations they faced. The researcher had no resources for purchase of a variety of educational materials; but he cajoled distributors into letting him have materials for a period of a few days, and he placed the materials in one large room. He then secured the help of a small group of children, and their teacher, to demonstrate and to play with the materials. The demonstration was not publicized; no notices of it were printed; but by work of mouth, and after the first morning of a two day schedule, he found himself overwhelmed by the response, so much so that he had to extend the demonstration another two days. The response was not only from the school in which the demonstration was held (although that was enthusiastic enough), but by word of mouth the news was spready to the community school system, and then to a neighboring school system, and the teachers came in numbers to see the materials about which so much excitement had been generated.

What were some of the materials? Among them were products from Electronic Futures, Inc., including a card with a magnetic stripe along one side, on which large type or braille could be imprinted; a 21 track, self contained, tape recorder with controls that are easy to operate even for persons with one hand, rugged and well constructed, from the same manufacturer; disc player made by Audiotranics, in California, that can rotate at full speed backwards for indexing purposes; variety of recordings of everyday sounds from commercial record producers; some courses in training for listening: one, produced by Mc-Graw Hill, was made for salesmen, and uses time compressed speech; a course in learning braille, produced by Electronic Futures, Inc; variety of large print books from a number of manufacturers, along with samples of large print produced by the ITEK plate maker, and a xerox 914 copier. Ther was also a wide variety of tactual displays, including holding boards with flannel or magnetic backings, allowing the construction of letter displays and tactual maps; there was even a special paper which, when heated, produced raised lines for tactual appreciation of outlines.

Some surprises turned up during the few days this equipment was demonstrated. For example, both teachers and pupils were somtimes startled at the way in which children were able to operate controls of machines quite well, even when it had been thought they were not capable of doing so; the inference is that the human engineering of some commercial products, at least, is better than had been thought. Another example: teachers found that even a two times enlargement of ink print type made text available to a far larger number of children having limited ability to read than they had thought, that the four times enlargement of other commercial materials was even better, and that they were surprised at how much was available from the educational supply houses.

One real surprise was that the IBM Model D typewriter on display, released this June, found far larger numbers of users than anyone would have suspected. Although no special attention was paid to the unit, it seemed to fascinate children, who quickly learned to make the association between a particular key and a particular braille configuration; furthermore sighted staff members of the school where the machine was on display found themselves by passing the overworked braille transcriber, and writing notes to braille reading collegues and students directly, even with letter by letter transciption if they knew no braille coding.

The overall impression of the researcher, who had to close his doors forcibly and return the equipment he had on loan, was that the knowledge of the availability of these materials, among others, encouraged so much on the spot ingenuity in applications among the teachers exposed to the equipment that they found themselves excited by the prospects of innumerable applications to the classroom they had never envisaged before. His exhortation is that, very simply put, the field of special education should look to the commerical houses for the equipment and materials they have available, use a little imagination, and find solutions to the many problems teachers say they face for lack of special purpose equipment now. His exhortation assumes a special importance when we remember the distribution of the levels of visual acuity among the school age population I have mentioned above;

there are obviously many children who could use equipment meant for the normally sighted who are the poorer for the lack of the stimulation they provide.

More importantly, however, I think it is imperative that some means be found to break the wall of isolation around the special educator. That wall was created by conditions which no longer prevail. If the change in the population of school age children who have some vision obtains as is described here, there are many children being educated as blind students who are in reality more sighted than blind (except in the economic or administrative meaning of the term). Perhaps what is needed is a mobile trailer, full of the educational materials and products such as those mentioned here, roving around the country, stopping where there are special educators and children in classes for the blind, and encouraging the exploration by teacher and students alike of the opportunities for overcoming the limitations of no special equipment for them.

I am aware, of course, of the program of the instructional materials centers just beginning to be established and to have some influence in the nation; and I should not like to diminish their importance nor their usefulness over the long term. Nevertheless, there is no substitute for bringing currently available technology and the products of technology to the classroom teacher in her own surroundings.

There is one more matter concerning relations among the classroom teacher, the administrator/educator, and the researcher that should be mentioned before leaving the topic. This has to do with the level from which facts about teaching of children is drawn to feed into the theory of the researcher. What is involved is the fact that to the researcher, "practitioner" means a person working at the "lower range" of hypotheses (to paraphrase Robert Merton); in the field, however, a "practitioner" is more often than not an administrator who is highly verbal, not presently teaching or working directly with children, or who is concerned with the implications of action programs on the community, state, or national levels.

Thus a researcher who is working at a "higher range" of hypotheses, i.e., at higher levels of abstraction from reality, needs the most basic, grass roots, information about how, why, what, when, and who, and is he is not likely to obtain this kind of information from administrative practitioners who deal commonly in categories or persons who act under a certain limited set of circumstances, under certain kinds of environments, and with certain kinds of grass roots practitioners (the classroom teachers). In other words, the researcher can obtain from the administrative practitioners only a preprocessed version of the reality he seeks to examine.

Since a researcher's theory, at a high level of abstraction, can only be tested so far as it can deal with as concrete a reality as possible, this means that high level theory is, more often than not, never tested against concrete reality, but only against an administrator's view of reality, with all the flaws that this entails. The interaction between the two is further compounded by the fact that the best grass roots practitioners are often teachers (and workers for the blind) who are not good at communicating what they do, although they communicate superbly with students or clients. Finally, those few persons who turn out to be exceptions to the rule, and are communicative with colleagues, do not deal at the grass roots level for very long: they are coöpted by the administrative structure in short order.

Since all these factors may represent constants in the interaction between researchers and practitioners, they are often ignored, and greater or lesser violence to the results of research is the consequence. An attempt should be made to face the possibility, however, that the constant value of these factors in the interation equation between researchers and practitioners may acquire different weightings depending on the population studied, the personalities of the actors, the nature of the research design, and the intended use of the observations obtained. For this reason, I consider them crucial variables in any research design.

Conclusion

This paper has atempted to give a rather rapid fire survey of attempted being made by researchers and technologists to deal with two of the major concerns associated with blindness and severe visual impairment: navigation and mobility, and direct access to the printed page. There are a few general features or distinctions of these several attempts that may help to organize thinking about these complex and many sided activities; as it happens, these features help to shape these activities into a few broad categories of effort.

The most important distinction is between systems technology and what I have called Gebrauchstechnologie or workaday technology, both special and applied.

The second distinction is between the community of researchers and the community of practitioners, and the associated norms which obtain in them, the activities carried on within them, and the lines of communication they have.

The third distinction is that obtaining in the administration definitions of blindness and severe visual impairment, definitions meant for the totally blind, which impose on our thinking techniques and methods and are inaccurately applied to students who may actually have some vision which can be used and trained for greater visual efficiency.

The fourth distinction is the result of examination of the demography of the blind and severely visually impaired population, and the realization as a result that blindness, even as administratively defined, is a relative rarity.

When these several factors are combined in clusters of factors which influence the course of research and development in the field of sensory aids, several important consequences follow. Prominent among these is that systems technology requires a large national effort to be mounted for successful delivery of its potency in useful products; the creation of a sustained effort for evaluation and training in the use of these products; and an engagement of the practitioner or teacher very early in the evaluative process.

Another consequence is that systems technology will not often prove to solve most of the problems faced by the teacher in the classroom day today: these are too varied and too special from child to child to make this possible. It is here that we can expect the greatest impact of workaday technology, and most especially from the direct utilization of currently available educational products and techniques developed for whatever purpose.

Finally, it is evident that if the opportunity is provided for the teacher herself, and her students, to create the sense of a classroom laboratory, a number of benefits may be realized. Among them is a fuller utilization of the capabilities of the individual student, a greater sense of accomplishment in the teacher, and the creation of a pathway for interest in the delivery of both technologies to the classroom.

The present state of our knowledge of sensory aids, at least on the level of workaday technology, permits us to see the almost immediate creation of an environment for the visually impaired child which offers him a wide variety of alternatives in his attempts to engage himself with the world around him. With relatively little effort, a realistic possibility exists to turn his learning environment into an exciting adventure in exercising his talents and allowing him a scope and depth of interaction which encourages him to explore and experiment.

The creation of a "creativity amplifier" out of the surroundings of the schoolroom has the possibility of making possible the creation of a "hearing feeling" space patterned after the "seeing hearing" space of the normally sighted child. Coupled with the possibility that this kind of innovation may help make possible the swifter delivery of systems technology to the classroom, the prospects for a richer experience for both the child and his teacher seem attractive indeed. The fact of an impairment cannot be changed; but the prospects for alleviating the consequences of visual impairment in children are steadily improving. What will you make of these prospects? Since a researcher can only advise, and cajole, and entice, but not coerce, your answer is awaited with great interest.

(Copies of the original paper, from which this condensed article was taken, are available from the author, Leslie L. Clark, Director, International Research Information Service, American Foundation for the Blind, 15 West 16th Street, New York, New York 10011)

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SPECIAL

THE DESIGN PROCESS IN SPECIAL EDUCATION FACILITY PLANNING

by

Alan Abeson

Introduction

The intent of this paper is to examine an approach to the planning of special education facilities to result in the design of physical facilities which permit the effective implementation of special education programs.

A few of the major factors should be discussed which can operate to improve not only the quality of the planning, but ultimately the effectiveness of the educational program that occurs in the completed building.

Design Process

One important phrase in planning special educational facilities is "design process." This phrase is used because it implies that the derivation of a design for a facility is not merely a matter of having an architect or designer produce predetermined designs of classrooms. Rather, the term implies that the derivation of a design occurs through a lengthy data gathering and assessing process that is centered upon an analysis of the behaviors and activities that will occur in the new environment. The first step in data gathering is precisely determining your philosophy as it applies to the education of the particular children of concern. Dr. J.G. Benedict expresses this concept with sufficient importance when he suggested in a personal communication that "the philosophy and the carriers of the philosophy be on hand well before new structures are constructed or designed."

In the past, educators have been approaching the design process when they have engaged in the preparation of the educational specifications. Particular attention is devoted to listing the furnishings and equipment that are needed. The problem, however, is that the specifications are rarely prepared with sufficient precision or completeness to be of great use to the architect. This is particularly true in describing many of the seemingly unimportant events which occur daily. Children take drinks, walk to the blackboard, stand at their seats. These things are unimportant perhaps but nevertheless of concern, for the architect may see implications for design which will facilitate the realization of many such activities. Of course, such an approach by the architect requires his appreciation of the positive effects which can be transmitted or reinforced by the environment. Consider an example: most classrooms and schools are designed to admit children directly into the classrooms from the hall or outdoors. Boots, coats, lunches, etc. are deposited in the main classroom and "arrival behavior" occurs there as well. Thus, some time must be taken by the teacher to stop that behavior and prepare the children for the learning activities of the day. What if an anteroom, separated by some type of barrier from the learning space were available and the children entered the learning area knowing that "now it is time to learn and we start by coming into this space." Would it make a difference in their mood or behavior? This is not certain, but that mood and attitude can be influenced by environment is known. Simply think of a "romantic dinner" and what that brings to your mind in terms of the environment.

Problems in Implementation of the Design Process

This brief discussion then leads to the specific problems likely to be faced in the implementation of the design process. Few educators have the experience to completely assess the capabilities of the environment and few architects can completely grasp the functioning of the educational process. The obvious need is to bridge this gap by bringing the designer and educator together for the exchange of meaningful information. In fact, what is required is the much maligned "interdisciplinary" effort. Included in this effort must be not only the educator, but also the full complement of ancillary and support personnel that assist the classroom teacher. As you well know, in special education this ideally involves an army of specialists from the speech therapist to the rehabilitation counselor, including classroom aides and dietary staff.

Inherent in the creation of a multidisciplinary effort in this arena are three formidable obstacles. The first of these is overcoming the barriers to communication that may exist between the designer architect and the educator. Designers frequently admit that they prefer graphic to verbal expression. Because educators live their entire lives using verbal expression, an immediate problem is evident. The extent of this incompatibility may extend from uses of the words "program" to "research." Student and Stea (1966) express the predicament of the designer most graphically: "Finally, he (the designer) must make highly complex design decisions with linguistic (conceptual) tools which are both inappropriate and clumsy (p. 130)." Studer (1966), speaking about the inability of the designer to assimilate the results of behavioral research into design criteria, issues a case for alterations of the language of the designer which permits the incorporation of other information.

While it may appear that what has been said thus far places the burden of fault upon the architect, this is not intended. After all, educators have similarly been successful at creating a highly specialized vocabulary which not only locks out other "specialists" but also causes internal confusion. The terms team teaching, grouping, and experience unit teaching are but a few examples. By conveying the demands of the environment in educational terms to the architect, the educator will be forced to clarify each concept demand to permit design decisions to be most accurately made. The educator can no longer say to an architect, "we need a 24 classroom school with the usual facilities," nor can be and his staff prepare a set of educational specifications for delivery to an absentee architect at a later date.

Another question that must be raised at the juncture is how much time the architect can economically afford to spend with the planning of your facility. Since his time must be limited, carefully drawn plans should precede the arrival of the architect to insure that his maximum contribution is obtained. Perhaps the architect should meet initially with the educational staff or committee that will develop the specifications to indicate some of the information he requires. The committee should, upon completing the specifications, interpret them for the architect. Also, the architect should spend time in the schools seeing what occurs, what the children are like, the multiple uses of space, etc. Perhaps the architect and representatives of the committee could interview staff to obtain individual information not contained in the summery educational specifications. Certainly, an effective working relationship between the architect and educational staff will prove valuable later when reaction to the preliminary sketches are needed. Therefore, the educational agents have a responsibility to plan the use of the architect's time with them so that the greatest amount of workable data can be generated for consideration in the preparation of the preliminary sketches.

The third problem, in addition to communication and economy of effort, is that of discovering with the architect what it is that you don't know. Consider the plight of the small community that is in the midst of planning a new building and wishes to include, as an integral portion of it, an instructional materials center. As the time comes to derive specific plans, it is up to the educator and architect either apart or in tandem to seek the aid of information and/or specialists.

While facilitating the design process through interdisciplinary planning is beset by three distinct major problems, the three are closely interrelated. To create communication, the feeling must be that both educators and architects have a contribution which can only be made effectively through interaction. The attempt to achieve interaction results in a clarification of vocabulary objectives and areas of competency. This clarification process is furthered by joint planning by the architect and educator to insure that the former is exposed with guidance to the maximum opportunities for the collection of information to be absorbed prior to the production of the design.

Conclusion

Consideration of two final points is necessary in conclusion. First, beware of accepting popularized concepts as requirements for your buildings. An example of this occurance is that many programs submitted to architects include a request for the provision of "maximum flexibility." The question is, if it is needed where should it occur, and how? Many classrooms now are constructed with the capability for connecting through the removal of a variety of types of temporary walls. However, we asked many of the teachers in these rooms how often they exercised the potential and the majority indicated rarely or never. Thus, another point has been scored for engaging in the careful preparation of individual programs.

Asking the teachers about the use of their rooms is a simple form of evaluating the environment. Thus, you should be encouraged to engage in as complete an evaluation as possible of your existing and new facilities. A most effective means of accomplishing this objective is to oompare the teacher teacher's reactions of the environment to the originally stated objectives in the program given to the architect. However, once the evaluation is completed, the results must not be filed away, but should be incorporated in the program for the next facility.

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ABSTRACT

GARLAND JUNIOR COLLEGE'S PROGRAM ON THE EXCEPTIONAL CHILD

by

Vera C. Weisz

This paper describes the philosophy of the Garland Junior College Child Study Department, and how it is implemented in the training of teacher assistants and teacher aides.

The students are prepared to work with children from two through six years of age, and are exposed to a core of human development courses and supervised practicum experiences that will enable them to assist with children in a variety of settings.

Assistant Teachers

Between 1963 and 1967, 20 of the Garland graduates transferred to college programs in the field of special education, and 20 worked with disadvantaged children. The training allows the students to become familiar with some of the problems and potentials of the exceptional and disadvantaged child during their training and become aware of the many approaches to teaching these children.

The Child Study majors are screened prior to the second year by the Chairman of the Department. Their personal qualities and potential to work with young children are reviewed. Field work placement with exceptional children is postponed to the second semester, so that during the first semester the student obtains a basic experience with normal children. An Associate of Science degree is awarded to the graduate.

Some of the special needs of the exceptional and disadvantaged child and the methods and compensatory practices in working with these children are described.

The Garland program offers a variety of enrichment experiences such as films, guest speakers, and observations in clinics, hospitals, day care centers and guidance centers to give the student deeper understanding of the exceptional child.

Close field work supervision and individual counseling is a strong feature of both the teacher assistant and the teacher aide programs.

Teacher Aides

The three short term training programs for teacher aides followed the prototype of the two year assistant program. Sixty percent of the candidates were from target poverty areas and ranged from 16 to 23 years of age in two programs, and 23 to 52 years of age in another, in contrast to the regular Garland student. These were six to eight week in residence programs with four credits, which included much group interaction, cultural trips, required remedial reading, role playing and other methods of intensifying the learning

experience.

The employment of these graduates was a major problem, since the local school system was not ready to employ aides. Seven of these girls received scholarships to Garland Junior College and 13 worked in day care centers and Head Start programs.

THE SPECIAL CHILDREN'S CENTER--A RURAL AREA, COMMUNITY SPONSORED MULTIDISCIPLINARY DAY PROGRAM FOR THE CEREBRAL PALSIED AND MULTIPLY HANDICAPPED

by

Frances G. Berko

Preliminary Considerations

In discussing rural area treatment and training of the cerebral palsied child, there are certain preliminary considerations. By now it must be fairly well recognized that there is a gap between psychological theory in perception and learning and textbook clinical treatment of the cerebral palsied and multiply handicapped child; there is an equally wide difference between what the books tells us to do and what is actually done in today's treatment and training of the child in the clinical and/or special education setting. If we recognize this, then we are prepared to face the reality that certain stock phrases like "treating the whole child" have virtually become meaningless when we speak of actual service to the child today. In describing any program which may be unique or different, a point is reached at which, except for these hackneyed trite phrases, our present vocabulary fails to be descriptive of what can transpire on the clinical level. Recognition of these facts is becoming increasingly widespread among the practitioners, as exemplified by Dr. Ray Barsch's (1967) latest works. He tries to establish a completely new vocabulary to express a relatively old concept within the modern framework.

It should be relatively simple to establish complete programs for the cerebral palsied in the larger urban areas where there are high population concentration of both potential caseloads and qualified professional practitioners in all the related disciplines. However, in the more rural areas which have neither the advantage of attracting trained personnel nor the concentration of caseloads, it becomes a challenge to provide an outpatient service of equal caliber to that which can be available to the child living in the metropolitan areas.

That is the challenge which we in Ithaca faced five years ago. At that point, and for at least some ten years previously, the Ithaca area had an outpatient facility serving cerebral palsied, mentally retarded, and other handicapped children who resided in a six county area. The staff consisted of a medical director who was an orthopedist, an executive director whose background was in a social case work, three therapists in physical, occupational, and speech therapy, a preschool teacher and an aide, a parttime leader for the adult program who was a freshman law student, and three bus drivers. Of the [illegible]9 names on the so called active case load, 34 were receiving some service, and information was finally gathered on five or six others. The children came from a six county area of central New York. Aside from the orthopedic evaluation on the physically handicapped children and the social case history, there was little or no information in the files. The therapists and teachers had no special training or experience with the multiply handicapped child. It was a therapeutically oriented clinic, where preschool was an unstructured waiting area for therapy. In fact, the preschool program was referred to as the "playroom." Concepts, such as childhood brain damage, specific learning disabilities, behavioral changes through operant conditioning, the needs for the structure program learning, perceptual motor deviances, etc. were completely foreign to the staff. Thus we had situations like a child trying to learn to lace a shoe in occupational therapy for three years, or the child drilling the "S" sounds in speech when he could not comprehend as simple a question as "What is your name?"

In other words, we began with a typical rural area facility, sponsored by four United Funds and Community Chests, under the leadership of a voluntary health board of interested, well meaning community leaders, and under the directorship of a capable woman who had neither the professional training nor the clinical experience to evaluate and design programs under modern clinical standards.

Purpose of Program

This then was the challenge: (a) to structure and gain finance to support a program commensurate with modern clinical practices, (b) to obtain the physical plan suitable to meeting the program needs, (c) to find and train a staff capable of carrying through a program to serve as many children as needed the program, and (d) to enlist the support of the professional and the lay community in support of such a program.

Before all this could become a reality, certain hypotheses had to be established. Essentially, the purpose of the Center is to obtain sufficient language learning improvement in the multiply handicapped child so that he can successfully return to the normal flow of community life. This is to say that, now and for the past five years, in so far as service to children is concerned, the Special Children's Center has disclaimed all pretense of being a day training center. While it is believed that every child, regardless of multiplicity of handicap, severity of retardation, or present level of function, deserves an opportunity to show what gains he can make under an intensive, professionally oriented clinical program, no child is sutained in the program, once it is established beyond a reasonable doubt that he cannot benefit therefrom. Essentially this means that criteria must be established and defined before programing is begun. Then, progress must be reported in accordance with the criteria. To achieve such progress, two approaches must be used concommittently: The environment must be adjusted to meet the needs of the child, while the child is taught to adjust to the environment. In this procedure, there also must be some selectivity on which needs of the child are to be served first.

This decision making for the Special Children's Center, in view of its basic structure, was relatively simple. Since it was programed for direct treatment of the child who resided within a 40 mile radius from its home base, it seemed obvious that little or nothing could be done by this facility to directly alter the psychological and socioeconomic condition of the home. By the same token, in view of the staffing limitations, any attempts to ameliorate preexisting parental conflicts which cause rejection of the child would at best be fragmentary. For example, finances have never permitted the Center to employ a qualified social worker who could make home visits. Therefore, the premise was established that alteration of the language learning behavior of the multiply handicapped child would have a radiating effect on the child's needs in that as the child demonstrates to the parent his increasing abilities, the parents would become more accepting of the child as an individual member of the family.

Structure and Functions of Programs

In programs based on this premise, the concept of "structure" was introduced. The assumption was made that if the multiply handicapped child could learn heterogeneously from free play experience, he did not need to be at the Center. However, free play learning is proceded in normal development by a certain degree of ability in behavioral control, perceptual motor development, attention span, receptive and expressive communication, and adaptive and creative play. These are the major learning deficits of the children within our program. It was therefore decided that, regardless of primary diagnosis, the group experience should concentrate on these learning areas in a strictly controlled environment, so that the trained teacher could be aware not only of what stimuli are being fed into the child, but also how the child is interpreting and acting upon the stimuli. Within this framework, it was hypothesized that no new learning could occur without a certain degree of behavioral control. To achieve sufficient behavioral modification to insure individual learning within the group of eight to ten children, simple operant conditioning was used, in which focus is upon one behavior at a time, and transference to the voiced command is made as rapidly as possible. The ultimate aim of such group programing was established at three goals: minimizing the specific learning disabilities, establishing the abilities at creative play within the free play framework and at the child's individual mental age level, and thus enabling the child to learn in the less structured group situation at that level.

Staff Responsibility

On another dimension, there had to be a definition of responsibility among the clinical staff of the various disciplines. In most general terms, the therapies were considered to be individual learning experiences given the child on a one to one basis, while preschool and other classrooms which were later developed taught the child to use in the group situation what was learned in therapy. This meant that most children had to be scheduled for both individual therapy and group learning experience.

Purposes of Therapies

The therapies themselves were redefined in purpose. Physical therapy was assigned the responsibility for self locomotion. On the premise that no real learning can occur without the ability to sit upright, thus allowing the perception of the environment as it is normally perceived, locomotion was broadened beyond the concept of walking. Rolling chairs were designed so that, whenever possible, the child could sit with his feet on the floor and push himself to where he wanted to go. These chairs were specifically intended for classroom usage and eliminated the use of the wheelchair during the time the child was at the Center. The use of the rolling chair in no way impinged upon the gross motor activity or the use of the floor for certain of the group learning experiences.

Occupational therapy was charged with the responsibility of visual perceptual motor development. Here again, the broadest possible range of activities was assigned to this area of learning. Everything from eye focus and hand eye coordination to abstract learning in reading comprehension and arithmetic problem solving was included in the definition; self care, including feeding and dressing, are considered a part of this visual perceptual continuum. In other words, occupational therapy at the Center is a combination of modern traditional occupational therapy for neurologically impaired children and educational therapy.

Perhaps the greatest deviation from traditional concepts was made in the redefining of speech therapy's responsibilities. To this area was assigned the responsibilities for individual language development and auditory perceptual development. It became a relative rarity for the Center's speech therapists to concern themselves with intelligibility of sound or of speech production. The primary concern here was to develop communicative ability, including vocabulary, phrase and sentence structure, verbal comprehension, and adequate oral language for self expression. While it was felt that sound and speech intelligibility came later in the developmental cycle and could well be handled by the public school speech therapist, it has also been proven that sound production improves in this type of child as auditory perception of sound becomes more discriminating (Johnson and Myklebust, 1967; Meecham, Berko and Berko, 1966).

Overlapping

Naturally, there is a considerable overlap between these modalities. What is more fundamental is that no child is a series of pieces which can be fit together like a jigsaw puzzle to make a whole. With the belief that the overlap cannot be eliminated, each child's program is designed to take maximum advantage of what overlap does occur. It might be said here, parenthetically, that this approach cannot be used without a bright, well motivated, well trained staff, among whom there is a complete absence of friction, tension, and jealousy. In this respect, we at the Center have been extremely fortunate during the past four years; so much so that in periods when there has been a shortage of personnel in one discipline, the staff in the other disciplines have incorporated some of the lacking objectives for the child into their own curriculum Thus, when we are short of speech therapists, as we are now, much of the language development is included in the lesson planning for occupational therapy. This, of course, indicates a strong, continuing inservice training program, so that individuals of one discipline become fully familiar with the techniques used by the other clinicians.

More advantageous to the habilitation of the multiply handicapped child, however, is that the clinicians understand that the overlap is not detrimental or repetitious in the child's overall learning. Each therapist and teacher, by the very fact that he is a human being, differs in his approach to teaching the same concept, even when the same materials are used. This fact, rather than confusing the child as it might be theoretically hypothesized, seems to reinforce conceptual learning and overcome the rigidities and abstract learning deficits. The ongoing, instrastaff communications about the learning performance of each child eliminate whatever temporary confusion may occur.

Diagnostic Evaluation

In order to achieve this caliber of programing approach, there initially must be a complete initial diagnostic evaluation. This entails a much larger team of diagnostic disciplines than the Center had five years ago. Gradually over the years, consultants in psychology, speech pathology, pediatrics, neurology and psychiatry were added. Today, when a child is first referred to the Center (98 percent of the referrals are made either by the family physician or some recognized agency), records of his past medical diagnostic and habilitative history are obtained. The first visit with his parents is for the purpose of complete case history taking and neuropsychological evaluation. Then the child is scheduled to be seen the same half day by the pediatrician, orthopedist, neurologist and psychiatrist, who, after they see the child and parent separately, confer with each other in the presence of the clinical staff to arrive at a diagnosis and prognosis, and to make recommendations both for programing and additional evaluations, if necessary, particularly in audiology and opthalmology. Audiometic screening and speech and language assessments are done by the Center's speech therapists who have master's degrees in Speech Pathology; these screenings and assessments are reviewed and strengthened by the consultant in speech pathology two or three times yearly.

Transportation

Because of the wide rural area served, transportation often becomes "the tail that wagged the dog." For example, it took a number of years to establish relatively homogeneous groupings on the basis of developmental level because of the routing problems involved in our own transportation system. The Center operates three buses, each originating from a point 30 to 40 miles away from Ithaca. Through the purchase of the larger buses, having each route make two round trips a day, and supplementing this service through public school transportation, this problem has gradually been diminished.

Facilities

During Christmas week, 1967, the Special Children's Center moved into its long dreamed of home. At a cost of $900,000, the Tompkins County Board of Supervisors had approved remodeling of an existing building which literally involved a complete gutting of the interior of the old structure and redesigning of floor plans to meet both the needs of the agencies housed therein and the demands of the governmental departments which support them. In this facility, the Special Children's Center occupies some 9,400 square feet, including classrooms, four speech therapy rooms, examining rooms, occupational and physical therapy departments adequate enough to house three therapists per department, a gross motor room, a workshop for the Special Adults program which is beyond the scope of this paper, and office space.

Relationship of the Center to the Public School System

After several vain attempts to get a grant from governmental and foundation sources, the local public schools were approached to provide special education for these children at the Special Children's Center. Since the class was designed to serve the older child (five to eight years old) regardless of primary diagnosis, whose academic function was on the kindergarten or first grade level, this special class was called the "classroom for the multihandicapped." Hence began a unique wedding between a public school system and a private agency in the education of children who need to learn in a special way. By mutual agreement the public schools agreed to provide furniture, supplies and the salary of a teacher hired after joint interview by both agencies. The Center was to provide curriculum guidance, supervision of the teacher, and other supervisory services which generally fall to the school principal. The classroom teacher is considered a member of both the Center's staff and the Special Education staff of the local school system, which, since December 1966, is the Board of Cooperative Educational Services of Tompkins-Seneca Counties. These five classrooms function on the same principle as the preschool, with a single exception. Because of certain administrative restrictions pertaining to age span in groupings, there are occasional children who are placed in one group because of their chronological age when their overall level of function is more compatible with another group's curriculum. However, because of the closeness of the cooperation between the public and private agency, these rare misgroupings are usually corrected to the advantage of the child. Perhaps the most unique feature of this programing is the interrelation between the classroom group and individual therapy. Not only is there a constant flow of children from the classroom to the various therapies, but there is an equally constant flow of communication between the teacher and the therapists, each shedding more information to the other about the child and his language learning needs. It is this dedication of staff which makes for progress; with 20 percent of the children successfully returning to the normal flow of public school placement each year, there is no need to cite other justifications for this program.

Obviously, this evolution to a relatively complete, professionally oriented center for the training and education of multihandicapped children could not have occurred without the support of the professional workers in the community. The education of the pediatricians, school psychologists, clinical psychologists, social workers, welfare and public health personnel, and school officials has reaped many benefits for all the children of our area. Beginning with the first meeting with the hospital pediatric staff, physician education, a continuing process, has included systematic mailing of all evaluative and quarterly progress reports, and attendance at the monthly evening staff meetings. While there is still much to be done in this respect, the communication between the pediatricians of the area and the Center has reached the level at which the Executive Director, a layman, can telephone any child's pediatrician to discuss observations and recommendations, even those which may be medical in nature.

Inservice courses have been given to welfare and public health personnel, so that the constant communication between these agencies have become a part of the daily routine.

Conclusion

This then is how the challenge is met. It is far from a perfect solution. Not only are there certain handicapped children within our service area who cannot benefit from such a program, such as the autistic child or the very severely retarded child below the chronological age of five, but we do not have the room to accommodate all the children that can be benefited. At no time within the past four years have we been without a waiting list in all departments; yet both our average daily attendance and our active caseload as more than tripled during that period. Each of our teachers is responsible for ten to 20 different children in the course of the day's work; while full time therapists teach a minimum of ten, but more frequently 11 or 12 different cases a day. In order to achieve an equal balance between individual and group learning, the therapy schedule is preset according to the prescribed weekly frequency of each therapy; in this manner the teacher has notice when each child will be absent from the group and can plan her curriculum accordingly. Due to perrenial shortages in trained personnel, the use of parttime therapists is frequent; this is feasible only when the therapist can work at the same time of day, two or more days a week, thus allowing the single therapist to see the same child at the prescribed frequency. Because some group learning situations are on a half day basis, it is also possible to employ parttime teachers, but experience has shown that this is not desirable in view of the amount of staff training, supervision, and general communication needed to maintain the established level of service.

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LEARNING DISABILITIES: WORKING WITH TEACHERS AND PARENTS IN RURAL AREAS

by

Emily B. Sheldon

Vermont's program on learning disabilities was started by a social worker because of the amazing array of unusual social problems extending far beyond schools into homes, among relatives, in play, in neighborhoods, and even at offices of doctors and dentists such as:

1. Making these children the butt of jokes and dares because of their known impulsivity, slow processing, or their tremendous desire to be included in play
2. Bizarre enough responses on the part of the children to cause an able sibling to say, "How'd you like to have a kook for a brother?", or feel deep resentment over punishments for acts tolerated by the handicapped one
3. Years of interrupted sleep due to the unusual startle response to night time sounds such as the bark of a dog, a distant fire truck, or the banging of a car door
4. Neighbors confusion (e.g., returning after dark from taking a child for a drive and being asked, "How can you find your house? I can't find mine unless it's blue")
5. The child's catastrophic response to medical procedure, dental care from prophylaxis to fillings to extractions
6. Deep conflicts over behavior management of these children between parents and among relatives
7. Often deep guilt by one parent who had weathered a like learning disability in a less hurried, less distraction packed, less competitive, and more accepting milieu.

Structure of the Vermont Association for the Crippled

In order to understand the approaches of the Vermont Association for the Crippled, it is necessary to describe the make up of the Association. Its services are state wide, and centered in Rutland where it conducts the State's only Children's Rehabilitation Center. The staff consists of an array of medical consultants on call rather than in residence, occupational, physical, and speech therapists, teachers, a bus driver, four aides, and social workers. Two psychologists come on an appointment basis--one to do the bulk of testing, and the other to test severely handicapped children whose performance and verbal skills might both be involved. The program includes diagnosis, outpatient training, and an intensive school therapy program for 50 children between five and 12 years of age who have the capacity to learn, and whose disabilities preclude regular school success. The diagnostic groups include cerebral palsy, congenital anomalies, speech and hearing problems, and learning disabilities in isolation or as an added part of the obvious, visible, audible handicap. Housing, because of its flexible adjustment for the different cultures of the children, to ease the strain at the day's end, but, most of all, to offer true home life as a substitute to institutional living, is in carefully selected and supervised foster homes. Foster parents truly become a part of the staff. The backgrounds of the children vary from poverty to riches and from parents with a sixth grade education to parents who are doctors and other professionals. In order to have meaning to all, all written materials for general distribution is presented with a seventh grade vocabulary; letters, often accompanying this material, can be geared to the parents' educational level.

Basic to this Association's work philosophy are that:

1. Diagnosis should end in a plan to reduce a handicap, or offer constructive guidance in its management.

2. A practicing therapist or teacher, put in the role of diagnostician, is more likely to meet our goals of diagnosis than one concentrating solely on diagnosis. Likewise, the constant exposure to problems in diagnosis sharpens the practitioners' observation in the classroom or in therapy. Also, exposed directly to the roles of parents in diagnosis, the practitioner better appreciates the need to include parents in all planning.

3. Contribution is what matters from staff; human foibles can be better tolerated if the focus is on contribution.

4. Staff is given the freedom to think, plan, and innovate, and thus, they contribute more than those whose creativity is curbed by an over abundance of supervision.

Diagnosis of Children with Learning Disabilities

Our plan to put theory into action in this hard to understand area of learning disabilities starts with the preparation for diagnosis. We put families, teachers, doctors, and hospitals to work supplying information which helps us plan the diagnostic study of each individual child. We use mimeographed forms (they permit inexpensive flexibility), and structure questions to focus thinking on the many areas of trouble these children often show. There are many check items to compensate for the long forms sent to parents, and much shorter ones were sent to schools. Direct questions, coupled with an explanation of their reasons, are sent to doctors, hospitals, and agencies, always enclosing a signed parent release form.

More often than not, diagnosis involves an array of tests and observations, and, for many, housing for a three day period. The diagnostic plan is mimeographed for all who are involved, and forms the feedback of information gathered from all sources to the parents. (We believe that written material has a different emotional impact on parents than verbal, and also allows an opportunity for as much accurate review as necessary.) The "diagnostic plan" includes a description of the child's history and handicaps, the reason for the visit, the housing plan, and the hour to hour schedule for each day. Since the referral is usually made by mail, and information is gathered this way, the whole plan has to be made without seeing child or family. Therefore every minute of the visit has to be adult supervised, and each adult takes the child to the next appointment. The diagnostic study is made by an array of testers and, in contrast to those we did in the past with testing only on a one to one basis, includes observations in living, on our bus, in free play, in the lunch room, in a classroom, and in play alone. Each involved person writes a report and makes recommendations for troubles noted in that area. The foster mother writes reports about eating, sleeping, behavior, and play. The Coordinator, who collected data and planned the diagnostic study, also collects written reports, and combines them into a written report for parents. Before doing this, however, usually the child is accompanied by the Coordinator to the Pediatrician's office (a good chance for observation), and the Coordinator has a conference with parents to learn about their feelings, fears, questions, approaches, and information or misinformation. A written Evaluation Summary Form is used (two mimeographed pages) covering 14 items considered, and is sent with an accompanying explanatory Key with numbers corresponding to the form. A letter is sent to parents giving conclusions and recommendations. Similar report material is routinely sent to the family doctor, the Superintendent of Schools, to the child's teacher, and to an involved agency. (Parents are told this, and they are pleased.) Sometimes actual copies of tests are sent, or the Pediatrician's report to the family doctor. All staff returns the diagnostic plan material in case this, too, needs to be sent to complete the picture. Thus the whole program from start to finish is largely handled through writing, but not without human contacts before the reports are sent. The efficacy can be tested only by the response to recommended action, and this is great. Refusal of parents to consider sending their child to stay with strangers is rare; the lack of response to recommendations happens seldom. Part of this is now due to our reputation, and part, we think, is due to the parents' sensing that we truly care. This can be shown in writing quite as well as in speech if done carefully, and in language parents understand. Even relatives (often nonunderstanding, disturbing ones) can share the parents' report; one parent, absent from an interview, can thus get the same facts as the one who came. The result of the sharing of this information with schools, physicians, and agencies shows clearly in referrals, and best of all, in the referrals of young children. It has led to schools seeking our advice in establishing Government Title projects they were considering for children with learning disabilities.

Treatment

In general, treatment seems to center on:

1. A plan of structure in the home, play, and school (disorganized children function best in a setting of organization)
2. Consistency in management to reduce confusions
3. Dilution of excitement for times when structure is absent
4. Medication for some to better stabilize behavior, attempted only in situations where valid observations can be fairly certain
5. An abundance of praise for children with failure packed lives, but always earned praise
6. Learning by doing to facilitate the foundation of all future learning
7. Enjoyable therapeutic activities, given at home or in school.

For the home, we have prepared mimeographed material on sequence, recall, listening, eye games, physical readiness activities--concentrating on the more common occurrences of deficits. A recent addition is on the use of the typewriter for children whose concept of letter size, letter order, spacing between words, etc. is distorted. The authorship of the material borrows from many people and many sources--those who write and develop programs in this field, and our own staff. Again all is written in a seventh grade vocabulary. We may offer occupational therapy for such problems as drooling (Margaret Rood's neuromuscular facilitation can be very effective in reducing and eliminating this socially difficult problem), bow tying, dressing, pencil grasp, or work on visual perception confusions. Many a household chore can be as therapeutic as any planned program:

1. Setting the table meal after meal and day after day, starting with a pattern and with supervision, can help to establish the concept of sequence and left to right progression.

2. Completing any work can help curb the distractible child's tendency to wander from the activity at hand--physically or mentally.

3. Self monitoring in a full length mirror--for cleanliness, general neatness, and correct closures--can start the monitoring process everyone must develop if school work and later employment is to be managed well.

4. Story telling about the interesting aspects of each family member's day at the evening meal can curb the tendency to interrupt (a turn is lost for those who interrupt!), improve oral expression slowly, improve listening, and give the slow processor a chance to be heard.

5. "A place for everything and everything in its place" is a wonderful motto to follow with the disorganized child.

6. Preparing for sleep with bathing and tooth brushing preceding bed by over an hour, and then the time until sleep filled with quiet, nonstimulating activities can often break the devastating pattern of delays in actually getting to sleep.

7. Often making simple suggestions will help warring siblings better accept their atypical brother or sister.

Our Parent's Auxiliary is helpful because it groups people who face like problems. Also having parents visit and report to members on training approaches, rather than having staff do it, increases the parents' slow understanding of a problem which has puzzled educators for centuries. Planned day long parent visits by class groups has been extremely helpful. Parents are given a list of all of the handicaps (not their child's) to be observed in a classroom, visible and invisible, and in writing before the visit. The parents meet with the teacher during a recess period, with the social worker while they eat their lunches. They learn from each other as well as by observation in the classroom. In order to check on these observations, again we use the written feedback system by asking the parents to write what they learned that was new, to make suggestions, and send questions.

Suggested Classroom Modifications

Suggested modifications for the classroom are made by one of our teachers, with the belief that it will irritate rather than help if there are too many, or if the modifications take more than a reasonable amount of teacher time. There is indirect learning for the teacher from both the reports sent to parents, and from copies of mimeographed materials sent to parents but shared with the teacher so he or she will see the total picture. Classroom modifications might include:

1. Special seating for the distractible child
2. Extra time given to a child who processes information slowly
3. Concrete aids if needed
4. Markers for children whose eye movement patterns are poorly stabilized
5. Reduction in visible distractions by folding a page, or covering part of it so the distractible child is not overwhelmed by a distraction loaded page of illustrations, writing, or figures
6. Suggestions on management (We often suggest the right of a child to go to a "quiet room" when his life starts to "fall apart" not for punishment, but for a chance to get reorganized)
7. Suggestions for the child who has real problems in hand skills, or real limitations in physical education activities
8. The offer of a teacher visit to our Center (these are frequent, and in Vermont come on a day allowed by many school systems for visiting another school. Our teachers are wonderful to these visiting teachers for they well remember their own early struggles in this field--and others which persist even to the present.)
9. Literature on this subject which often helps remove guilt from the teacher when she realizes the problem stems from nervous system dysfunction rather than from her teaching and management
10. School visits by one of our teachers (infrequent but reassuring), if the parents and the teacher wish them which can be very helpful as our teacher observes the child in the school setting, and then discusses problems seen with the teacher, as well as others which baffle the teacher.

Conclusions

After struggling with this problem since 1953, the Vermont Association for the Crippled has reached many conclusions:

1. Too many reports are written by professional people for professional people with confusing verbiage. Professional gobbledygook actually slows up progress in this field.
2. Reports to parents are often strewn with such terms as "perception" which confuse rather than help parents.
3. It may be possible to streamline diagnosis as we have learned that some tests tell more about a child's disability than an array of others.
4. The diagnostic plan should include group participation with structured and unstructured as well as one to one testing.
5. Teachers, once freed of their guilt about the inadequacies of children

with learning disabilities, make excellent observations, and spot most of the problems which any testing reveals.

6. Bright children are able to work out their own compensations in many instances if the child has help on the social aspects.

7. Children with learning disabilities can be as easily spotted in kindergarten as in upper grades, and the remedial work they need can be given more quickly, and the efficacy of special training improved more than when given early than at a later age.

8. Preventive work can be effective for most children if given in regular school by a regular teacher (while this Association has never found any "canned" program which meets the needs of different children, we have found two programs--Getman's Physiology of Readiness and the Peabody Language Development Kits--which in combination offer excellent prevention possibilities, are complete, have clear directions, and are very effective if presented exactly as described. The cost of these materials is negligible compared to the cost of a single repeater!).

9. Medication, while potentially very helpful to some, can be very upsetting if handled loosely, for it takes the help of time, and good observations for any doctor to arrive at the ideal medication and dosage for a particular child.

10. Preparation for medical care has to be matter of fact, very brief, and given immediately before treatment.

11. The "big brother" system of dental care works well where the new to dentistry child observes his big brother having dental care before it is his turn.

12. Teachers, parents, doctors, and agencies must work together in order to avoid situations which further confuse or actually handicap an already handicapped child.

13. The majority of problems in learning could be handled effectively in regular school, and doubtless will be, with the increased awareness of and knowledge about dealing with this problem.

14. The focus on learning disabilities in schools will improve all education as it becomes geared to the individual rather than for the masses.

15. With this change in educational concepts, the classroom teacher will become a happier, less frustrated individual.

16. The main reduction in the problem will come if underachievers in kindergarten, or children not ready for first grade are given the special help they need before formal learning starts.

17. Learning disabilities are common coupled with poor hearing, cerebral palsy, visual deficits, congenital anomalies, and, most of all, speech problems.

18. The failure complex of these failure prone children is as disabling as the learning disability itself, and a factor to be considered in training quite as much as deficits in areas of learning.

19. Auditory skills and remedial work in this area need much further emphasis.

20. Irregular eye movements can be a very damaging factor in learning.

21. Speech therapists, with their training concentration on language development, articulation, motor patterns, rhythm, and listening, have a wealth of contributions to make in the field of learning disabilities.

22. Physical therapists, understanding pathology in relation to movement patterns, can restructure physical education work so it can be therapeutic and avoid the chronic failure pattern.

23. Occupational therapists, in their concentration on drooling, hand skills, and visual and tactile perception training, can help a great deal (tactile perception deficits can be as handicapping as visual or auditory!).

"When you reach the point of no return you must forge ahead or fail completely", is a good motto for this field of learning disabilities. To really get in it you get "hooked" without awareness; to stay in it you have to find the way to forge ahead. No state, no teacher, no training center yet has all the answers in this vast, perplexing, challenging area of learning. Many an innovation works; many more will work as well or better! Vermont encourages innovation.

THE RELATIONSHIP BETWEEN TWENTY-THREE LEARNING DISABILITY BEHAVIORAL VARIABLES

by

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Assisted by R.L. Jones, Curtiss Brown, W.M. Gibson

Introduction

Learning disability among school age children has become a national health and educational problem of considerable magnitude. It is estimated that 20 percent of all elementary children fail to adjust either to the social order of the classroom or to the academic standards established at a specific grade level. Gilbert (1957) reports that academic difficulties are the reason 75 percent of the children between the ages of seven and 13 are referred to school psychologists and child guidance clinics. Only three to five percent of these children have any obvious mental retardation or physical disabilities.

The medical, educational, and behavioral science disciplines have advanced a variety of theoretical explanations as to the causes of learning disability. It is probably safe to say that there has been more written about learning disability than any other topic in child development. Yet, the term is used in many different ways and not even a satisfactory definition has been substantiated. The fact that there is no single cause for all learning problems is the evident reason. Extensive but scattered research has shed some light on this multidimensional causality. However, most of the research has not been focused on either those human behaviors which are responsible for learning or those which restrict the processing of information.

In the general medical out patient clinic of Columbus Children's Hospital, in Columbus, Ohio, about 45 percent of the children are referred by school authorities for learning or behavioral disorders. Only a very few of these children have any real disease or health problems which could interfere in their classroom performance. The majority of these children upon closer examination present no apparent physical or intellectual reason for learning failure. This study was undertaken to obtain systematic behavioral data on the way children with learning disabilities process environmental information. The initial contention was that specific behaviors resulting in learning disabilities can be found bearing relationship to the reason for academic failure. It was not our purpose to devise a new theory of learning disability, but rather to extract from multiple etiologies the correlational indices that may explain how individual information processing behaviors are related to academic disturbances.

Problem

A review of the literature relative to learning disability quickly reveals many possible causes for such a problem. Studies have been reported correlating learning problems to visual disturbances (Betts, 1946), hearing and speech difficulties (Eames, 1938), physical and health, and emotional adjustment (Prentice and Bessie, 1965; and Mitchell, 1956). More recently, a new category has appeared called the "minimal" brain damaged syndrome (Clements, 1966; and Cohn, 1964). The cultural problems associated with social economic status, broken homes, and parental pressure have taken their place in offering equality inconsistent findings (Buxbaum, 1964). The problems of poor school readiness, inadequate development at the critical point of school entrance, a lack of early school success, and the quality of teaching have also been reported (Grunebaum, Hurwitz, Prentice, and Sperry, 1962).

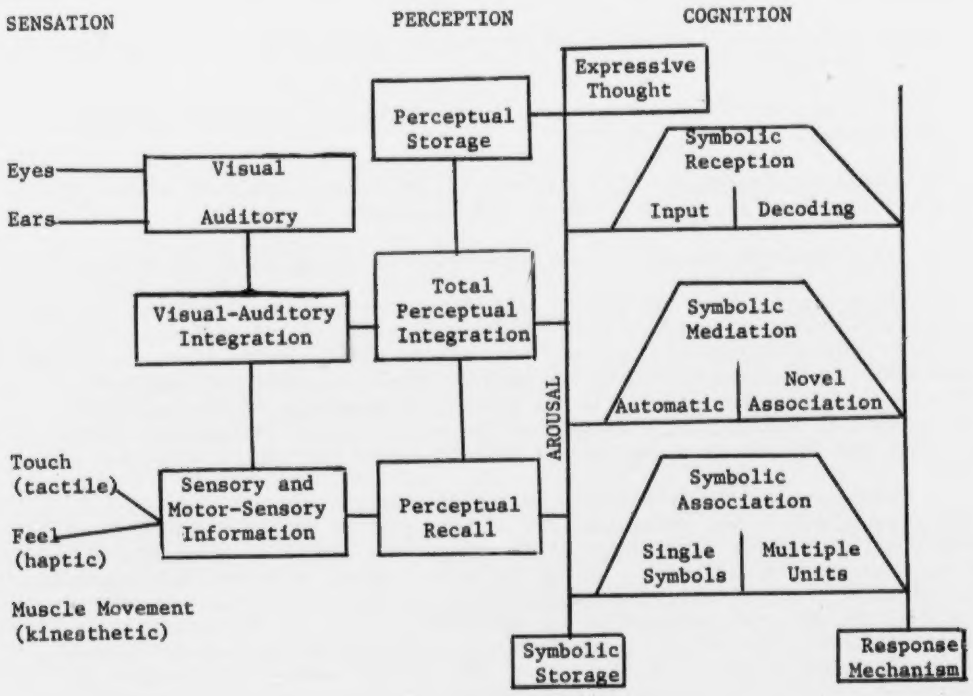
It is probably true that each of these problems may exist in isolation or in some combination for any selected group of children with learning disabilities. A multidimensional diagnosis of all the possible etiologies seem important if we are to determine the specific reasons for a learning disability. Said another way, a visual motor perceptual problem may result in reading failure. A problem in visual motor perception is not a proper diagnosis, or even a specific diagnosis. It is merely a description of one aspect of human behavior. It may well have other antecedents and many generalized accompanying responses that also impair some aspect of the youngster's social adjustment, self image, reaction to school, and academic skills other than reading. The antecedent problems could be cerebral insult, developmental disturbances in growth, or emotional disturbances. In other words, the specific learning disability must be determined before it can be treated, or indeed the child may be programed to fail in school.

This study attempts to clarify the behavior patterns associated with learning or the means by which children with learning disabilities process environmental information. It raises the question about which specific behaviors amalgamate to produce learning as the means of processing environmental information. The two tenets underlying the collection of data were (a) the use of standard psychological tests, and (b) a parisimonious learning model that offers an explanation for information processing behaviors. This model simply explains that environmental stimulation begins in the sensory receptors as input (environmental information) which is coded neurally and transmitted to the perceptual centers. Perception is the accurate and rapid interpretation of information into correct categories for further relay to the centers of higher learning. In these high cortical centers language is formed into symbolic conceptual units. Once language concepts are formed they provide the formation of additional language symbols within the framework of the original conceptual categories. This is called conceptual association. If the language concepts create different or additional language categories, we have language conceptual mediation. Mediation is the association of conceptual symbols between categories. The higher centers must be able to receive, associated, and mediate symbolic units in a systematical manner. Language output is important in the classroom. However, we do feel that responses, especially oral ones, are overly stressed.

The model implies two other important dimensions: (a) the integration of perceptual information from more than one perceptual source (auditory and visual) and its storage (memory), (b) an arousal, which is the interconnection between a meaningful perceptual experience and the transmission of that perceptual information appropriate to the conceptual units within the cortex. A lack of arousal is why many well received perceptual experiences never become learned information.

Figure 1

The Model Used to Describe the Information Processing Behaviors


SENSATION
PERCEPTION
COGNITION
Expressive Thought
Perceptual Storage
Symbolic Reception
Input
Decoding
Eyes
Ears
Visual
Auditory
Total Perceptual Integration
Visual-Auditory Integration
Symbolic Mediation
Automatic
Novel Association
AROUSAL
Touch (tactile)
Feel (haptic)
Muscle Movement (kinesthetic)
Sensory and Motor-Sensory Information
Perceptual Recall
Symbolic Association
Single Symbols
Multiple Units
Symbolic Storage
Response Mechanism

Procedures

Subjects: Forty-five boys served as subjects for the study. The chronological age range was from six years and four months to 12 years and two months. The study was kept as bias free on selection procedures as possible by using all the male subjects who met the selection requirements over a nine month period of clinic intake.

Selection Requirements: It was mentioned earlier that most of the children referred to Learning Disability Center have no apparent health or physical problems. Children selected for this study were carefully screened within the outpatient clinic for the following disabilities at the established criteria:

1. Hearing loss--no greater than 15 Db in the better ear
2. Visual impairment--no difficulty greater than a corrected refractory error which produced 20/20 vision
3. Chronic illness--no history of any prolonged disease or accident
4. Seizures--no history of seizures (transient starring spells or febrile seizures were not included)
5. Family pathology--no pending divorce activity, overt marital stress, or foster home placement
6. Gross motor--no overt patterns of neuromuscular incoordination
7. Speech and language--no articulation or other motor speech problems which might interfere with communication
8. Sociological--no pattern of previous home stress, bilingualism, frequent neighborhood or school mobility
9. Emotional--no history of existing anxiety, or bizarre behavior related to the situational aspect of school or the classroom
10. No other apparent abnormalities that would draw attention to the child.

Prescreening: Two different types of prescreening were included in the subject selection. The initial screening was that associated with the school referral. The selection requirements were mailed to the public school personnel responsible for getting them into the hands of the principals and teachers. The referral was initiated by teachers possessing knowledge of the selection requirements in addition to knowing that the child must be underachieving by the simple definition of doing failing work in either reading or arithmetic.

Teacher referrals were signed by building principals and given to school psychologists who determined the global level of verbal function by administering Stanford-Binet Tests of Intelligence. They also administered tests of academic achievement. If the child was normal in verbal intelligence and evidenced academic underachievement in one or both of the tool subjects mentioned, he was then referred to the outpatient clinic at the hospital. The social worker and medical student visited with the parents and child upon the initial clinic visit. At that point, the initial medical examination was undertaken. If all the selection requirements were met, the child was then referred for a clinic visit to the Learning Disability Center for systematic medical, social work, and psychological examinations.

Behavioral Methodology

The initial visit to the Learning Disability Center was made a very pleasant experience. Two rules were always observed: (a) children were never overcome with any medical procedures or white coats, (b) parents were always given interpreted information. The child usually began his visits with enjoyable nonschool structured activities. The parents were seen for social work and developmental interviews. The number of clinic visits seldom ranged less than two or more than five. The length of time in behavioral study was always offset by free play. The test periods never became either a dull ritualistic question and answer period, or hear this and do that response set.

The psychological instruments selected to obtain the behavioral sample were purposefully chosen to represent popular clinical tools, instruments that every clinic has on hand. A list of 23 tests and subtests were developed to obtain measures for the information processing behaviors discussed earlier, and shown in the model. A list of the 23 tests and subtests variables are shown in Figure 2. The test and subtest variables will retain the abbreviations and numbers indicated in Figure 2 throughout this study.

Figure 2

A List of the Twenty-Three Tests and Subtests Variables
Used to Assess the Information Processing Behaviors

Wechsler Intelligence Scale for Children (WISC)
1. Information
2. Comprehension
3. Arithmetic
4. Similarities
5. Vocabulary
6. Digit Span
7. Picture Completion
8. Picture Arrangement
9. Block Design
10. Object Assembly
11. Coding

Test of Auditory Perception (TAP)
12. Discrimination
13. Recognition
14. Memory
15. Comprehension

Wide Range Achievement Test
16. Word Recognition
17. Spelling
18. Arithmetic

Bender Visual Motor Gestalt Test (BVMGT)
19. Immediate Memory
20. Delayed Memory

Birch's Auditory Visual Integration Test (AVI)
21. Auditory visual Integration

Southern California Test of Motor Accuracy
22. Preferred Hand
23. Nonpreferred Hand

Tests that were administered but not included in this study because

because of insufficient data or scoring problems were the:

24. Money Road Map Test of Directionality
25. Draw-a-Family
26. Draw-a-Man
27. Make-a-Picture Story
28. Gate's Reading Comprehension

The Wechsler Intelligence Scale for Children (WISC)

29. Mazes

The 23 tests and subtests variables are reiterated in Figure 3. The purpose of this figure is to show the specific information processing behavior a given test is assumed to assess. The model shown in Figure 1 theoretically explains why certain behaviors were considered more important to assess than others. Thus, the limit as to the number of psychological instruments that could be administered within the realm of practical considerations was reduced to 29. Only 23 of the 29 tests administered were treated as variables in this study. The six tests or subtests not used were disregarded because of scoring difficulties or the fact that they produced insufficient data.

Figure 3

The Tests and Subtests Used to Measure
the Various Behaviors Identified in the Model

Visual Perception
    BVMGT--immediate memory
Visual Perceptual Memory
    BVMGT--delayed memory
Auditory Perception
    discrimination
    recognition
    memory
    comprehension

Visual Auditory Integration
    Birch's Visual Auditory Integration Test

Symbolic Reception
    WISC--Digit Span (aural input/oral response)
    WISC--Coding (visual input/motor response)

Symbolic Mediation (vocabulary language)
    WISC--information (aural input/oral response)
    WISC--comprehension (aural input/oral response)
    WISC--arithmetic (visual/aural input/oral response)
    WISC--similarities (aural input/oral response)
    WISC--vocabulary (aural input/oral response)

Symbolic Association (visual motor)
    WISC--picture completion (visual input/oral motor response)
    WISC--picture arrangement (visual sequencing/motor response)
    WISC--block design (visual input/motor response)
    WISC--object assembly (visual input/motor response)

Laterality and Directionality
    SCTMA--preferred hand

SCTMA--nonpreferred hand

Academic Achievement
    word recognition
    spelling
    arithmetic

Results and Discussion

The purpose of this study was to determine the specific behaviors or clusters of behaviors utilized in the processing of information associated with learning disabilities in 45 male subjects. The data from the 23 tests and subtests used to assess these information processing behaviors were treated for relationship by multiple correlations and related principle components using a Kaiser's Varimax on an IBM 7094.

The means and standard deviations (SD) for the 23 test variables are shown in Table 1. The mean values for the WISC subtests are scale scores. The scores for the TAP are the number of correct responses and the scores for the BVMGT and AVI are the number of incorrect responses. The WRA test scores are given in grade placement units, i.e., 2.52 indicates a word recognition level of second grade, fifth month.

Table 1

The Means and Standard Deviations (SD)
for the Twenty-Three Subtest Variables

Subtest Variables	Mean	SD
1. WISC--Information	8.96	2.00
2. WISC--Comprehension	10.36	2.26
3. WISC--Arithmetic	8.09	2.31
4. WISC--Similarities	11.09	3.29
5. WISC--Vocabulary	10.49	3.33
6. WISC--Digit Span	9.13	2.44
7. WISC--Picture Completion	10.64	2.23
8. WISC--Picture Arrangement	9.53	2.26
9. WISC--Block Design	9.93	2.90
10. WISC--Object Assembly	10.11	3.25
11. WISC--Coding	8.22	2.99
12. TAP--Discrimination	21.93	7.13
13. TAP--Recognition	16.73	6.73
14. TAP--Memory	17.64	6.82
15. TAP--Comprehension	26.02	7.77
16. WRA--Reading	2.52	14.09
17. WRA--Spelling	2.25	10.95
18. WRA--Arithmetic	2.75	9.38
19. BVMGT--Immediate Memory	6.13	3.59
20. BVMGT--Delayed Memory	7.49	3.82
21. AVI	3.64	2.63
22. SCTMA--Preferred	451.42	44.12
23. SCTMA--Nonpreferred	443.11	24.79

N=45

The test data from the SCTMA is given in scale scores. The hand with the greatest accuracy in completing the manual motor task within a time period was called the preferred hand, the other hand becoming the nonpreferred hand. The TAP, BVMGT, and AVI subtests were compared on the basis of correct or incorrect responses.

A detailed or extensive discussion of the relationships between the variables will not be reported as the reader may determine those aspects of particular interest by examining Table 2. This discussion will be limited to those relationships which were obviously clinical. The relationship between WISC vocabulary and WISC similarities subtests were extremely low. Clinically, we began to sense a difference in what these two subtests measure. DeHirsch, Jansley, and Langford (1967) have shown that children referred to language clinics frequently have academic learning problems. The results in Table 1 indicate that the children with learning disabilities have scores similar to the mean values on both the similarities and vocabulary subtests. In the clinic, we felt that vocabulary was a rote assessment of an aural oral association type of behavior that really requires very little mediation of symbolic concepts. It was frequently suggestive of the ability to receive and express language symbols. The WISC similarities subtest was found to be highly predictive of children with subtle language impairments, the kind of impairment where the child was unable to mediate between various categories of symbolic concepts. Thus, a child with a high vocabulary subtest score and a low similarity subtest score, became highly suspected of a central language problem.

In examining the population as a whole, there were low negative correlations between WISC similarities and WRA test results of word recognition, spelling, and arithmetic. The WISC vocabulary subtest correlated at an equally low level with the WRA subtests. This is somewhat contrary to the popular finding that vocabulary is the best predictor of school success. It is probably true that vocabulary is the best predictor of reading comprehension among children in the normal academic range. It seems equally true that vocabulary tests with children having learning disabilities are not predictive of any specific information processing behavior related to learning disability except rather gross language impairments (which are most frequently obvious).

If the standard type of language tests do not predict learning disability, then what does? The answer to this question again resides on what we consistently saw in the clinical assessment of these boys. There were only low positive correlations between the two aural oral language measures and the various tests of perception. The only place where this relationship was predictive was in the BVMGT test of Immediate Memory, a correlation of .44. The correlational relationships between the perceptual behaviors and the WRA test emerged as generally positive and moderate to moderately high. The relationship between the WRA and TAP were in the high forties and low fifties. The AVI subtest correlated at .49, .48, and .57 with word recognition, spelling, and arithmetic, respectively.

Even more surprising is the fact that the correlation between the various perceptual variables was not proportionately high. The correlation between the TAP subtest of auditory perceptual discrimination, and the two forms of the BVMGT, and AVI, were .25, .11, and .25, respectively. The correlations between the other measures of perception were higher, running in the forties and fifties. The correlation between the two forms of the BVMGT was significantly high. Since the same nine BVMGT design cards were used in both administrations, the difference became that of the behavior being assessed. The one is a measure of the visual perceptual immediate copying response to

Table 2

MULTIPLE CORRELATIONAL VALUES BETWEEN EACH OF THE TWENTY-THREE TEST AND SUBTEST VARIABLES

Test and Subtest Variables

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	.431	.394	.415	.259	.379	.098	.109	.133	.263	.074	.095	.275	.391	.325	.349	.303	.194	-.126	-.166	-.163	-.083	-.043
		.181	.243	.511	.326	.084	.352	-.017	.069	-.056	-.044	.166	.054	.164	.060	.062	.045	-.082	-.250	-.070	-.157	.026
			.419	.162	.445	.174	.112	.279	.319	.158	.069	.688	.198	.088	.031	-.011	.019	-.127	-.185	-.050	-.125	-.159
				.211	.143	.051	.145	.363	.239	.150	.018	.077	.190	.225	-.120	-.089	-.087	-.105	-.238	-.140	.104	-.062
					.090	-.016	.475	.234	.186	.239	.163	.203	.123	.096	.046	.097	.010	-.190	-.442	-.156	-.069	.198
						.026	.128	.037	-.016	.111	-.010	.350	.349	.113	.075	-.021	.120	-.093	-.073	-.085	-.033	.003
							.181	.229	.134	.080	.006	.302	.250	.208	.137	.109	.246	-.136	-.142	-.146	.169	.101
								.395	.038	.080	.051	.290	.104	.179	-.030	.002	.034	-.046	-.283	-.134	-.091	.248
									.460	.259	.109	.130	.294	.078	-.030	.076	.118	-.303	-.288	-.185	.330	.188
										.210	.060	.182	.357	.245	.045	.011	.028	-.479	-.459	-.157	.185	.255
											.433	.338	.416	.229	.153	.173	.222	-.305	-.186	-.336	.214	.098
												.394	.358	.380	.376	.425	.488	-.253	-.114	-.250	.120	.196
													.740	.731	.539	.493	.568	-.423	-.485	-.556	.284	.346
														.757	.447	.446	.515	-.420	-.406	-.484	.363	.361
															.506	.467	.501	-.418	-.528	-.638	.353	.438
																.915	.744	-.270	-.216	-.496	.211	.212
																	.841	-.382	-.288	-.488	.227	.214
																		-.502	-.317	-.575	.248	.411
																			.775	.624	-.527	-.358
																				.669	-.428	-.357
																					-.487	-.368
																						.273

designs, and in the other, it is a matter of copying the designs from memory. The correlational difference between these two variables was highly positive (r=.77). High correlations were also found between the auditory perceptual memory variable and the other TAP subtest variables of recognition and comprehension. The memory component does predict other related areas of perceptual involvement fairly well. The BVMGT measures of immediate memory correlated well with the achievement WRA test results, at the high forties and low fifties.

Table 3

Correlational Indices Between Twenty-Three Variables Identifying Four Principle Components

Test and Subtest Variables	Principle Components			
	I	II	III	IV
1. WISC--Information	.267	.648	.024	.219
2. WISC--Comprehension	.063	.317	.117	.636
3. WISC--Arithmetic	-.051	.680	.147	.062
4. WISC--Similarities	-.126	.501	.289	.156
5. WISC--Vocabulary	.034	.122	.147	.748
6. WISC--Digit Span	.135	.610	-.052	.115
7. WISC--Picture Completion	.168	.202	.175	.024
8. WISC--Picture Arrangement	.010	.083	.127	.653
9. WISC--Block Design	-.067	.239	.589	.126
10. WISC--Object Assembly	-.039	.276	.632	.051
11. WISC--Coding	.237	.178	.352	-.015
12. TAP--Discrimination	.488	.045	.127	-.006
13. TAP--Recognition	.688	.221	.292	.201
14. TAP--Memory	.599	.397	.438	-.028
15. TAP--Comprehension	.662	.170	.381	.137
16. WRA--Reading	.895	.065	-.072	-.024
17. WRA--Spelling	.897	-.018	-.010	.021
18. WRA--Arithmetic	.873	-.020	.134	-.003
19. BVMGT--Immediate Memory	-.381	.028	-.711	-.111
20. BVMGT--Delayed Memory	-.289	-.001	-.689	-.439
21. AVI	-.593	.044	-.503	-.146
22. SCTMA--Preferred	.258	-.154	.611	-.181
23. SCTMA--Nonpreferred	.337	-.235	.378	.245

N=45.

Table 3 indicates the correlations between rotated principle components using Kaiser's Varimax. The correlational values for each of the factors which appears to be moderately high to outstandingly high are underlined. Principle Component I seems to represent an academic achievement oriented factor indicating the high relationship between the four TAP subtests variables and the AVI integration variable. Principle Component II seems to be concerned with the ability to associate and mediate language concepts as previously learned information. In other words, it represents previously learned factual information, number facts, and memory for digital units. This is definitely not a perceptual factor and has a very low relationship to academic achievement in children with learning disability. Clinically, the case seems to be that most of the children referred for learning disability had good use of language and an excellent ability to discuss educational facts in clear and concise terms.

Principle Component III would be a visual motor perceptual factor if we exclude auditory perceptual memory. It is certainly difficult to logically recognize the relationship between the auditory perceptual memory (TAP) and the ability to visualize designs and reproduce them manually. The perplexing aspect is that the auditory visual integration test variable (AVI) is also related to this factor. Therefore, if we wish to become theoretical, we may probably assume that BVMGT delayed memory, AVI, and TAP memory subtests are related to visual perceptual and motor manual accuracy in some dimension that may have far reaching teaching importance. It is quite possible to think that memory could be trained to overcome some very resistant problems associated with visual motor perceptual development. In fact, this may be a compensatory behavior displayed by many children eight years and older, who seem able to reduce the character of perceptual difficulties via other behaviors. These other compensatory behaviors may include perceptual memory, language association and mediation, and language association and storage.

Principle Component IV has a direct relationship with the ability to sequence central language association that generally concerns one level or area of verbal association (one word meaning, one concept meaning, one story meaning) and produce a syntaxical verbal language pattern (expressive speech). Principle Component IV lacks the perceptual component of Principle Component I, the central language and aural receptive (WISC, picture arrangement is a visual input task) of Principle Component II, and the visual motor memory perceptual component of Principle Component III.

These four Principle Components representing these highly positive relationships between variables seem to suggest that specific information processing behaviors can be identified in male subjects with learning disabilities.

Summary and Conclusion

Children with learning disabilities offer researchers in many disciplines the opportunity to explore the vast numbers of behavioral complexities which comprise human learning. This study attempted to describe some of the behaviors which may be responsible for learning. These were referred to as information processing behaviors. It was suggested that learning begins with the sensory intake of environmental information, including the perceptual interpretation of information which results in the association or mediation of that information into symbolic concepts. The behaviors responsible for the processing of environmental information were constructed into a learning disability model.

Twenty-three commonly used psychological tests and subtests were administered as variables in keeping with the information processing behaviors detailed in the model. The subjects were 45 males, with an age range of six years and four months to 12 years and two months. The subjects were preselected and prescreened for possible physical, health or emotional problems.

The correlational analysis between the variables indicated the level and degree to which these behaviors were related. The various correlations indicated that perceptual problems may occur as single disabilities or as auditory visual integrative perceptual errors. Clinically, it became possible to indicate prognosis and plan certain aspects of prescriptive teaching based upon the singularity or combination of perceptual problems. It was also noted that perception is not in itself a single entity, but in fact, a combination of several fundamental information processing behaviors; two of which are exceedingly important, memory and integration.

When the variables were rotated for major components, four factors emerged. These factors seem to represent the patterns of information processing behaviors which are related. Therefore, each of these factors might be described as a major area of learning disability, with each of the related variables representing specific learning disabilities. This may imply that there is nothing homogeneous about classes for children with learning disabilities. It might further disclose that the various major categories, if we must use categories, might be:

1. A perceptual category containing various possible perceptual behaviors

2. A symbolic mediation category

3. A perceptual memory, spatial relations category

4. A language association category.

In conclusion, one might extract that it is important for teachers of learning disability classes to have reports of specific information processing behaviors and not global measures, such as IQ. This would be advantageous for the teacher in two ways: (a) in knowing those information processing behaviors to strengthen or avoid using, and (b) in what way the classroom environment could be modified in working with these children.

This study would certainly support the facts that children with learning disabilities have multidimensional etiologies, and that the academic difficulty must be regarded as a symptom, not a cause.

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INTERNATIONAL ASPECTS OF SPECIAL EDUCATION

THE EDUCATION OF EMOTIONALLY DISTURBED CHILDREN IN SEVEN EUROPEAN COUNTRIES STUDIED IN THE SUMMER OF 1967

by

Joan E. Bowers

These observations attempt to distinguish the essential features of some services and programs for emotionally disturbed children in various European countries and to indicate the elements common to two or more countries.

Individual Programs

In England, the local educational authorities are responsible for the provision of services for the children in their schools. In consequence, one finds evidence of a positive relationship between the size of a community and the number and variability of the programs established.

One finds child guidance services, which usually include psychological and school health services, and special day classes for emotionally maladjusted children. Pupils attending these classes remain on the register of their regular school, but spent two to five half day sessions per week at a special class consisting of about five pupils selected by the educational psychologist after an examination of referrals submitted by teachers.

The teacher of the special day class arranges for the admission of the pupil, makes decisions concerning the number of sessions attended during the week, and facilitates the return of the pupil to the regular school when this is believed to be warranted. Teachers of these special day classes have almost unlimited freedom in organizing their groups and planning the program. Frequently, they place both aggressive and passive children in a single group. They encourage the pupils to enage in individual creative work such as painting and provide assistance in academic work to pupils desiring it. The teachers see their function as being primarily one of helping each child to release the emotional tension which hinders his learning, and they seek to establish a personal relationship with each pupil. They cultivate in the members of the class a sense of achievement in hope that curiosity and interest will grow and learning will ensue.

The regular day classes in England are comparable with the segregated classes for emotionally disturbed pupils found in certain centers in North America. Some maladjusted children coming from homes which apparently interfere with their improvement are placed in residential schools.

In general, the maladjusted child is kept with normal children as long as possible and removed for special treatment only when there is no other choice. When this is done, the pupils are returned to normal settings as soon as is feasible.

In France, it is firmly held that a team of specialists must study the child before a diagnosis is made. In consequence, a file on a French maladjusted pupil contains educational, social and medical histories as well as data derived from the administration of a battery of mental tests. French workers believe that it is unwise to separate a child from his family unless this is absolutely necessary and they feel that it is a questionable procedure to make marked alteration in the general educational program. Consultations are given at mental health clinics, hospitals and juvenile courts. Residential centers are available for children under observation and for those who are seriously disturbed.

The French education authorities are proud of the services they have developed, but are aware of the necessity for their expansion. Their plans for the training of additional teachers and for increasing their facilities are impressive.

In the Canton of Geneva, Switzerland, the treatment of disturbed children is similar to that observed in France. Here also a child under consideration is seen by a team of specialists including a teacher, the social worker, the physician, the psychiatrist and the psychologist. In school, a quiet, calm, helpful and healthy environment is sought. There the child can learn to tolerate others and to earn their toleration while the team helps the family to eliminated home centered difficulties. In the canton, there are a few residential schools which are reluctantly used for pupils with serious problems. A child placed in one of these homes is left there for a short term only and is frequently visited by his parents.

The Inspector of Special Education in Geneva spoke of his satisfaction with the general format of their program. Year by year, younger children are being referred to the clinic. An increasing number of referrals are from anxious parents seeking assistance as soon as they notice a developing problem rather than, as in the early days of the clinic, from teachers referring pupils with more advanced and more deeply rooted conditions. The Geneva authorities plan to extend their Medical Pedagogical Clinic because of its significantly beneficial effects.

Czechoslovakia has begun to help emotionally disturbed children rather recently. It was hoped by Czechoslovak workers that as health services throughout the country improved, fewer children would be born with defects. However, they have confirmed observations made in other countries that this improvement is less effective in diminishing the relative number of gravely handicapped children than in additing to their life expectancy.

The Czechoslovakian services are based largely on the medical model. Out patient service is available at hospitals for children with behavioral disorders. Assessment is made in small regional centers. A decreasing emphasis is being placed on the establishment of large centers which, of necessity, must be inconveniently situated for many families.

At present in Hungary, there are few special arrangements for emotionally disturbed children. The problems presented by physically handicapped children and those of restricted intelligence take precedence over those resulting from other handicaps.

In the Soviet Union, one notes a tendency to regard all behavioral disturbance as attributable to damage to the central nervous system. It is recognized that the children require special treatment, but the educational treatment approximates more closely to that associated by us with intellectual limitation than to our procedures designed to ameliorate emotional handicap. As the child spends much time at school and at the recreational buildings known as "Pioneer Palaces", the influence of the family is considerably less than it would be in North America. In general, the family does not have an opportunity to influence adversely the development of a child, a situation which sometimes occurs in western societies.

Finland is increasing the number of regional diagnostic centers to which children presenting unusual problems to the school or to the family are brought under observation. These centers are committed to the multidisciplinary approach referred to in the discussion of French and Swiss procedures. In small communities, the teacher is expected to care for an emotionally disturbed child in the regular classroom, whereas in cities, observation classes have been established. The school authorities of Helsinki have decided to increase the number of observation classes for emotionally disturbed children because of obvious benefits derived from those already in existence. The Helsinki school system is also establishing a psychological service much larger than its present one to assist in the detection of children with problems and is establishing district child guidance clinics which will give treatment if the parents so desire.

Common Elements of European Programs

There are many common elements in assessment services and special classes dealing with emotional disturbance presented in this necessarily brief account of the facilities described by educational workers in seven European countries.

1. The needs of emotionally maladjusted children are gaining increased recognition.

2. Regional assessment centers are being established to ensure that children in need are looked after at a center close to the family.

3. Diagnosis has ceased to be essentially a medical assessment made by a physician or an educational appraisal made by a teacher aided by the school psychologist. Instead, assessment is seen as a many sided study of the child to which social workers, general physicians, psychiatrists, teachers, psychologists, speech consultants, recreation leaders, and others contribute. The day of the multidisciplinary approach has arrived in the assessment and treatment of the disturbed child.

4. Educational leaders agree that a variety of approaches must be developed in the attempt to solve the many varying problems presented to them by emotionally maladjusted children.

5. Most workers in this field express grave doubts concerning the wisdom of educating a disturbed child in a social environment consisting mainly of other disturbed children. It is acknowledged that some children cannot be kept in a regular classroom because their behavior seriously interferes with the learning of other pupils. However, if this interference can be avoided, it is firmly believed that an emotionally maladjusted child has more to learn from association with normal children than from placement with others like himself.

6. The teacher of one of these "Regular Classes" should be able to consult with specialists and to enlist the support of the school principal as an effective member of the team.

7. In view of the acknowledged desirability of fostering self confidence,

adept teachers give the children the maximum amount of mastery or apparent mastery of academic work.

8. While residential treatment is considered to be necessary for a child from a deficient family, it is not highly regarded in the treatment of the majority.

9. The need to involve the cooperative assistance of the family is widely, if not universally, acknowledged.

SPECIAL PROGRAMS FOR EXCEPTIONAL CHILDREN IN FRANCE

by

Gertrude G. Justison

Background: Education in General

The Republic of France is the largest country of Europe excluding Soviet Russia. Like its neighbor Germany it had, until mid century, a highly organized system of national education operating from a central Ministry in Paris. Following World War II, national debate in education and the demand for major reforms provoked radical reorganization of education, especially in secondary and university programs.

Reforms decreed in 1959 under de Gaulle's Fifth Republic are still not completely implemented, but decentralization and curricular emphasis on technical and extended secondary schooling have modernized the narrow academic approach and have brought some progress toward democratization of the French educational system. Compulsory schooling to age sixteen (instead of to age fourteen) became effective in 1967. More pupils are staying longer in school and more from the middle and lower classes are now engaged in longer studies.

For purposes of local school administration, the country is divided into twenty academic districts. Each district as a university center administered by a rector (appointed by the Ministry) and advised by a local academic council. The rector has control over all types of instruction though a prefect handles routine matters and inspectors carry out supervisory and administrative functions. In general, each district is a fairly exact copy of the structure of the Central Ministry in Paris before it reshaped itself with the exception that the Branches (Primary, Secondary, or Technical) have formed a single corps responsible to the Executive Cabinet of the Ministry since 1961.

Schools are divided into three broad categories:

1. Nurseries and Kindergartens (for children under six years)

2. Elementary Schools (for children from six to 14 years)

3. Secondary Schools (for those from 11 to 17 years).

There are two cycles in secondary education: (a) the course common to all pupils 11 to 15 years of age and, (b) the more specialized training for technical or industrial occupations or preparatory for general education colleges (lycees) for youth 15 to 18 years. Higher education is available through the 20 state controlled universities and a few private religious schools offering degrees in theology, law, and humanities. Since the early 1960's, higher education has suffered from overcrowding, lack of facilities, and shortages of personnel. Failure rates are high at the degree level (72 percent) but despite this the degree group accelerated from 5 percent in 1950 to 11 percent in 1960 and is expected to go as high as 22 percent by 1970.

Fraser (1967) reports that the children of agricultural workers are still not getting into the lycees in significantly large numbers. Budgetary restrictions have reduced the building of technical lycees, although five new Academic Institutes of Technology opened in 1965. These offer a degree in Technology after two years of study beyond high school. Thus it is clear that educational reforms have increased the diversity of university education and contributed, in part, to manpower needs.

Teacher preparation is undertaken at l'ecole normale (teacher training institute) and followed by a post baccalaureate course of professional training. Three years of study at l'ecole normale awards the baccalaureate degree and a teaching license. A fourth year (equating with a masters degree) of professionsional study earns the certificate. Fraser (1964) describes problems of content, method, and professional training as "slow to change," with the hierarchy of studies persisting, syllabi and method largely unaltered, with note taking, memorization, and verbalism persisting as modus operandi. Two new teaching degrees (baccalaureate) covering technical and industrial subjects have been added within recent years. In addition, according to Dr. R. Lafon at the International Congress on the Scientific Study of Mental Deficiency, in September, 1967, in Montpellier, France, a "distinct profession is establishing itself in France at the same time as in neighboring countries, that of the educator specialist and that is going to benefit by the institution of a State Diploma (personal notes)."

Special Education and Services

For several decades the French Legislative Body has been making efforts to provide help for the handicapped through Social Welfare or through Social Work assistance. These measures are not fully developed by do represent net progress from the early part of the century. Under present law, any infirmity bringing about 80 percent of permanent incapacity is eligible for social assistance within three months of disability.

Financial aid is given to parents of handicapped children of less than 15 years of age provided resources are not over a minimum ceiling. This seriously reduces the numbers who can benefit from such assistance. Costs for care and education of the handicapped placed in specialized institutions are assumed under public collections as provided under the law providing specialized education for all handicapped youth to age 20.

France has a large network of public and private specialized institutions for the blind, deaf, crippled, sick, and debilitated, and retarded. Most are coeducational residential institutions which offer comprehensive programs from preschool to and through technical and sometimes professional training. Many of these same institutions also offer educational programs and services to limited numbers of nonresidential (day) students. Throughout the provinces, especially in urban areas, many centers for training and therapies exist in connection with hospitals and University medical units.

Institutional Programs

Deaf and Hard of Hearing

The literature reports four national institutes for the deaf, all catering to both boarding and day students. Three are coeducational, one is for girls only. One admits pupils at age three; the others at age five--with training to age 21. In addition to these are seven state or county institutions and one private center (in Paris). These too are coeducational and cater to the four to 20 age group. Primary school classes for students with hearing deficiencies operate in boys' or girls' schools in nine provinces. Speech centers exist in connection with hospitals in seven cities throughout France and some seven phonoaudiological centers are attached to Paris hospitals. Speechreading is taught in three Paris centers and four other centers in the provinces, usually in urban areas close to medical schools or hospitals.

Professional preparation in audiology, speech pathology, and orthophony is available at eight centers of medicine and/or medical psychopedagogic institutes, again in major urban areas--Paris, Lyon, Toulouse, Marsailles and Bordeaux. Diploma or certificate awards for study depend on prior preparation and type and length of studies.

Blind and Partially Sighted

Several decades of legislative efforts through Social Welfare and Work Assistance on behalf of the blind represent some progress from the early part of the century. Unfortunately, the usual measures do not encourage the adult blind to work but do offer financial aid to the families of handicapped youth. The decree of May, 1964 maintains allowances for specialized education for blind youth placed in institutional care.

About two per 1,000 of the total school population are blind or partially sighted. Some seven agencies serve the blind. A network of specialized institutions, both private and public, in cooperation with the Ministry of Public Health and Population and the Ministry of National Education provide education at all levels up to and through higher education and professional preparation. The National Institution for the Blind, in Paris, deals with children from seven to 21 years of age. The Ministry of Education has also created many special courses for amblyopic children.

The Physically Handicapped

Incidence of physical handicap (motor handicapped and chronically ill) is estimated at about 12 percent of the population from five to 19 years of age, making imperative a program of diagnosis, treatment, and education at all levels and within a variety of structures. In those cases where extensive medical treatment mandates hospitalization and long term care, schooling is managed within the hospital setting. Periods of convalescence after intensive short term or long term hospitalization are utilized for educational assessment, remediation, or compensatory programs prescribed by teams of medical, psychological, and educational personnel in the rehabilitative effort. The professional personnel of such rehabilitative institutions are described as highly qualified. While some youths receive their entire schooling within medical institutions, an overwhelming majority receive special primary and/or secondary education enabling them to be readmitted to the normal school environment.

Programs for the homebound chronically ill child are facilitated by the use of telephone, radio, and television communication systems and cover primary, secondary, and degree programs as a free service of the National Education Ministry.

A few specialized classes are attached to normal school groups for children who are orthopedically handicapped, epileptic, cardiac, asthmatic, hemophiliac, or otherwise chronically ill. Such classes enroll 12 to 15 children and offer individualized curricula in the protective environment which capitalizes on the outdoor milieu. A few of the chronically ill are able to attend boarding schools for advanced studies in Paris or Strasbourg.

Beis, Meyer, and Maniciaux (1966), in a study of 1,310 physically handicapped and chronically ill pupils five to 18 years of age within a normal school setting, found that 18 percent of all cases were enrolled in secondary and technical education. About seven percent of the study population were chronically ill, and the others were motor handicapped. Only six percent of the study population came from the rural areas. Of those cases reported, about one-third were in the 100+ IQ range, 25 percent in the 80 to 100 IQ range, and 23 percent had IQ's less than 80. Many motorically handicapped children are virtually deprived of adequate education despite the fact that 62 percent are of sufficient intellectual level to profit. It is claimed that this is the result of parental negligence to report to specialized institutions the handicapped status of their children.

Diabetic children in France must get approval of the head of the school for admission to normal day or boarding schools. If such admission is not approved, diabetic children can be enrolled in a school program in Niort where some sixty youth live in residence and attend different schools in the city on a day school basis.

Cardiac and Asthmatic youths attend classes generally with normal school children in the primary grades. In secondary school programs, placement in "climatized" lycees provide the healthy outdoor environment considered therapeutic for such disabilities.

Epileptic children were studied by P. Cridon (1965) of Nancy who reports that 60 percent of those enrolled in regular school programs attend regularly and about 10 percent show marked absenteeism. Of a sample population of 74 cases, Cridon found about 7 percent to be profoundly retarded.

Maladjusted--Emotionally Disturbed

The special decree of September 1965, in addition to the broad reforms of 1959, assures appropriate schooling for maladapted children and youth. Determination of eligibility requires the collaboration of medical doctors, psychologists and teachers and mandates liaison between Health, Social and Educational Ministries.

A special issue of *Esprit* (1965) reports a 1963 study of *Delinquent Youth*. Of 2,960 youth reported, 1,339 were in residential institutions and 380 lived with parents. Of 2,267 youth "in moral danger," 658 were institutionalized and 364 lived with parents. The remainder were given outpatient counsel and advisement. The overwhelming majority were boys and most were from the over populated urban areas.

The Mentally Retarded

There is a paucity of literature on educational programs for the retarded. The famous diagnostic clinic in Paris headed by Zazzo is highly reputable throughout Europe. Most available reports on the retarded are written by physicians and/or psychologists, although Dr. R. Lafon reported in the 1967 International Congress on Mental Deficiency, in September, 1967, in Montpellier, France (personal notes), a growing concern in the education of the profoundly and moderately retarded and the formation of a Corps of specialist teachers. Friends who have visited and studied European programs report the impression that France looks to Belgium, Switzerland, and the Netherlands for leadership in educational programing. Diagnostic evaluations seem to follow developmental trends probably reflective of Piaget's influence in Europe.

It is interesting to note that, of three recent international conferences with special education participation, no French educator was featured as a speaking contributor.

Summary

France, like most countries of the world, is in the midst of sweeping educational reforms. The problems of implementing legislative provisions for special education programs and services to meet the needs of exceptional children and youth are the same that beset most countries of the world. General features of reform repeat themselves across the national boundaries of Europe as they do across state and regional boundaries in America wherever special education programs and services replace or supplement regular instruction. Common denominator needs include recruitment and preparation of professional specialist personnel, and provision of facilities, equipment, and supportive services sufficient in number and quality to insure educational opportunity and experience appropriate to the needs and capacities of all exceptional persons. It is clear that France is making definitive progress in living up to the reforms outlined in 1959 under the Fifth Republic. But it is equally clear that in this country, like other advanced countries of the world, special education is still at the most primitive stages in realizing its stated goals.

As a professional association we might well profit by the caution called for by Ignacy Goldberg at the Montpellier Charter Congress on the Scientific Study of Mental Deficiency (1967). He warned of the dangers of comparing educational programs in the absence of well defined criteria for such comparisons. The limitations of time and exposure to programs and the lack of cultural perspective in the total effort of a region or a nation seriously reduces the value and worth of much of the international effort in recent years. At the same time the scope and dimensions of our common problems makes international cooperation in special education a mandate of our times.

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ABSTRACT

A SURVEY OF THE EDUCATION OF THE MENTALLY RETARDED CHILD IN TEN EUROPEAN COUNTRIES

by

Jason W. McCallum

The information for this survey was determined from observation of facilities and from presentations by senior educational administrators. The format of the paper includes a general review of definition, educational settings, curriculum and teacher training.

Definition

There is much variability among countries in their definition of the educable mentally retarded (EMR). IQ scores of between 50 and 65 appear to separate the educable and trainable groups. An upper limit of about IQ 80 was indicated as separating this group from the child who would receive regular classroom instruction. The communist countries emphasize a multi-disciplinary approach with medical specialists, psychologists and educators being involved. This approach has great value for research, but function and performance must be the basic criteria in placing a child in a given program.

Educational Settings

In Europe, as in North America, the issue of whether special classes should be in regular schools or special schools has not been settled. In England, Germany, Czechoslovakia, the USSR and the Netherlands, education is undertaken exclusively in special day schools. Class sizes range between 12 and 20 students. Advances are apparent in preschool public education beginning at age three, particularly in the communist countries.

Curriculum

Primary skills with varying emphasis on visual motor training through crafts and games probably form the core for all of the early programs. There is a varied degree of stress on academic subjects. Antithetical situations existed in London as compared to Bonn, where the latter stressed much academic work in the upper grades.

Specific curriculum is established in three communist and in two Scandinavian countries. Communist countries also supply texts, teaching manuals and materials. In the Scandinavian countries the curriculum is to be used only as a guide or norm to approach, whereas the other curricula appeared to be considered as directions.

Vocational training is provided by most countries, either in vocational schools or in the senior grades of the elementary program. Sheltered workshops also are fostered, particularly in the Netherlands. Generally, however, the extent and quality of vocational training is as varied as that found in North America.

Teacher Training

Teacher education of the mentally handicapped has been and still is an uneven pursuit. While North American teachers appear dissatisfied with their training, there appears to be less concern expressed by their European

counterparts. The latter possibly have more professional university training and have a much greater feeling of being "specialists" of exceptional children.

Discussion

The impression from the survey indicated a strong feeling about the needs of children and a desire to meet them through facilities and curriculum. A prescribed curriculum to be used as a norm might have value, particularly when it is recognized how often the special teacher yearns for some guidelines. The most encouraging observation involved a commitment on the part of educators to provide fuller educational and training experiences both before, during and after compulsory school attendance.

SPECIAL EDUCATION IN ENGLAND

by

Ronald Gulliford

Following is an outline of the organization of special education in England and a consideration of a number of areas in which international cooperation could be productive.

Types of Special Education

Present arrangements for special education stem from the Education Act of 1944 which gave the local education authorities (of large towns and counties) the duty of finding out which children in their area suffer from any disability of mind or body and of insuring that they received special education in special schools or in other ways. Ten categories of handicapped children were specified: blind, partially sighted, deaf, partially hearing, educationally subnormal, epileptic, maladjusted, physically handicapped, speech defective and delicate. (The gifted are not included because we consider them to be well cared for by grammar schools.)

The *educationally subnormal* correspond to the American term educable retarded. The definition of educationally subnormal was deliberately made a broad one, referring to children who were educationally retarded on account of limited ability or because of other conditions, in order to get away from rigid IQ criteria and from the prewar certification of pupils as mentally defective or feebleminded. The result is that they range in IQ from 50 to 85 (sometimes higher), and there is a lot of consideration given to deciding what criteria should apply.

The *maladjusted* category was a new one in 1944. Their education was first mainly given in small boarding schools which combined a family atmosphere with a therapeutic approach. Day schools and classes have been developing, although they provision does not match the need. The majority of *epileptic* children are of course in ordinary schools, but there are six schools for severe problems requiring specialized education and medical treatment. The majority of *speech defective* children are in ordinary schools but there are several boarding schools for aphasic children. There is a wide range of day, boarding and hospital schools for the *physically handicapped*.

Of possible interest is the *delicate* category. Originally open air schools for delicate children were started in the early 1900's for children whose health had suffered from poor social and health conditions in industrial urban areas. With improved health and welfare the number of such children has declined and the vacant places have been used as an extra facility for children with a variety of conditions such as minor maladjustment, educational retardation, social disadvantages, or other needs not appropriately met by other special schools.

Trainable retarded children are at present the responsibility of local health departments who provide for them in training centers; others are in hospitals for the subnormals. There are moves afoot which make it likely that the trainable will come under Education and become a part of special education. There has already been a trend to set up assessment classes for borderline retarded children of 5 to 8 years as a means of deciding the degree of educability before placement in training center of special school.

Delinquent children may be sent to boarding schools approved and supervised by the Home Office. Most large towns have remedial teaching, home teaching and language teaching for immigrants.

Two supporting services are the School Health Service, which plays as important part in the identification of handicapped children an in child guidance, school psychology and speech therapy (the latter two laboring from shortage or personnel), and school welfare services; and the Youth Employment services.

The larger authorities (London, Birmingham, Manchester, etc.) provide schools and classes for each of the handicaps but areas with smaller populations may arrange for some groups of handicapped children to go to schools in neighboring authorities or to boarding schools; of the 76,466 pupils in special schools, 20,898 are in boarding schools. The majority of schools are run and financed by local authorities out of local taxes supplemented by government grants. There are a number of schools run by private organizations (especially for blind, physically handicapped and maladjusted children), although the fees are paid by local education authorities. The vast majority of pupils are educated at public expense; there is very little private special schooling. Medical examinations and treatment are provided by the School Health Service and by the National Health Service.

Special training and certification for teachers is only obligatory at present for teachers of the deaf and the blind, although many colleges and universities provide training courses in special education. Training consists of a year of full time study three to five years after initial teacher qualification, with the teachers being paid full salary by their local authorities. Just under half the teachers in special education are men.

Issues for Cooperative Planning

The population is small enough and the geography compact enough to aim at comprehensive provision for all who really need special education. One of the questions in which we could fruitfully cooperate internationally is how much special provision to make for different groups of handicapped children. The survey by the Wood Committee in 1929 is acknowledged to be one of the more reliable estimates of the prevalence of mental defect. At present Professor Tizard of London University is directing an interdisciplinary research in which whole age groups of children in the Isle of Wight are carefully screened for disabilities--not only the major ones but the less obvious disabilities affecting learning. Information from this study should provide a basic measure of the minimum provision needed in other areas. For example, in this relatively rural area with few large towns he has come up with an incidence of maladjustment of 6 percent.

But it is one thing to know the expected incidence of disability; it is another thing to set up the machinery for ensuring early identification. Public health departments of local authorities already operate observation registers listing all children born at risk and these are followed up by pediatricians and infant welfare doctors. This increases the chances of detecting sensory and physical handicaps as early as possible in the preschool period. We need to develop a second tier of identificatory procedures in the first school years in order to ensure the early detection of disabilities which become apparent in an educational setting. Present procedures used in Britain are routine school medical examinations, visual and audiometric screening and referral by headteachers (school principals). But we know that some children are identified much later than they should be; there are variations in the competence of schools to identify children and there are variations between areas, notably between the North and South of England. In England, children start school at five years of age, and by the time they reach the age of seven, teachers have a fairly intimate knowledge of them. It would be useful to develop a systematic use of teachers' observations of their pupils supplemented by a sample of children's performances on several critical tasks in order to identify children who are obviously going to need special help and those who are likely to need special help. It seems especially important to identify educable retarded children, maladjusted children and children with learning difficulties. Many school systems do in fact screen children at about age 8 but it would be preferable to screen them by the end of the seventh year. In England, it is unlikely that there will be enough experts with the time to perform this initial screening but with professional guidance, the teachers' contribution to this process could be made more systematic, objective, and reliable. In a recent survey of 11,000 seven year olds, headteachers were asked to specify whether in their opinion the child needed some form of special education. The teachers had no difficulty in classifying 5 percent as likely to need special help and were undecided about another 3.5 percent.

A second issue that lends itself to international cooperation is the organization of special education. The English system is based on the special school. Thus 45,000 educationally subnormal children attend special schools and this represents 0.7 percent of the total school population of children from 5 to 16. There is a larger number of retarded children receiving some form of special teaching in ordinary schools but these arrangements are less well organized and supervised. There are special classes in ordinary schools for partially sighted, partially hearing, maladjusted, and delicate children. However, there is an important need for special schools in a system of special education as a center where a variety of resources and specialties can be focused. In England, the need is felt to develop a special class system complementary to special schools, and this is one area in which American experience would be helpful. A related problem is how to ensure the satisfactory integration of the exceptional child into ordinary schools and regular classes. We all pay lipservice to the belief that wherever possible the handicapped child should be integrated, but it is not so easy to ensure that the school and the teachers have sufficient insight, knowledge and the appropriate attitudes to do this adequately.

One of the problems which confronts special educators at the present time is the many children who don't fit neatly into official classifications. Research into disability distinguishes various neurological disabilities, clumsy children, language disorders, autistic children and other kinds of specific disorders, sometimes seen as separate groups from the major handicaps, and sometimes as problems occurring in all of them. Distinct educational programs and environments are specified for them; parent pressure groups add to the demand. If a country is trying to develop a comprehensive system of special education and its resources are strained to provide for the major needs, just how far should it go in differentiating provision for subgroups of exceptionality? Maybe the answer depends on the existing method of organization, and within special schools perhaps it is possible to meet special needs by setting up classes. Perhaps also the answer depends on demographic factors, and it may be possible in large urban areas to cater for many distinct needs, but in thinly populated areas special classes and schools will have to continue to cater for a spectrum of disability by individualizing treatment as far as they can. In England, this problem is before us in the educationally subnormal schools which inevitably include the socially disadvantaged, the maladjusted and retarded, the neurologically impaired, the borderline trainable, the non-communicating child, and children with mild physical and sensory disabilities. The question of the possible value of separate schools for the cerebral palsied and for spina bifida children is also under discussion. There is a distinct trend in English thinking towards the notion of a comprehensive special school which provides for a variety of handicaps, and for more liaison and interchange between specialists in different areas. There is need for much discussion of such issues which are very relevant to the situation of countries where special educational development is just getting under way.

Another issue for cooperation is in planning preschool education for exceptional children. It would be superfluous to argue the case for early education of the handicapped. In England there is a fair provision for the preschool deaf and for the physically handicapped. For a long time English pre nursery schools (run publicly for children between the ages of three and five) have taken a number of handicapped children, especially the emotionally disturbed and those with delayed language and speech. Day nurseries run by the Health Department have also taken a few children, including the mentally retarded. There is strong public pressure for public nursery schools to be provided much more extensively, especially for socially disadvantaged children. Also middle class parents have banded together and are running their own play groups, often including a handicapped child. We also have a preschool specifically for handicapped children acting as a diagnostic center and counseling service. These developments suggest other possibilities for the highly desirable preschool education of exceptional children. This again is a growing point in special education in which international interchange would be beneficial.

There are of course many other issues in curriculum planning and special methods worthy of cooperation, and the idea of international cooperation in planning special education could be a fruitful one. There is nothing more stimulating to thought that finding that someone else does something different from you--unless it is trying to unravel how something which appears to be same in two countries (like deafness!) is yet different. As far as Britain is concerned, we already make much use of American textbooks and research reports. It is to be wished however that there were more interchanges between personnel such as those offered by the CEC conventions; that is one reason we of the Association for Special Education were glad to welcome a large contingent at our 1966 Conference in London (as well as a contingent from Russia). But conference interchange is not enough nor is communication between University personnel. There could be more reciprocal visits between administrators and teachers. Also, it would be helpful to know more about European special education. There surely would be benefit in more thorough comparison of the ways different countries tackle similar problems.

There are, however, some important qualifications to make about the values of international cooperation in special education. One can't really understand another system without having real understanding of the sociocultural differences, the different political and administrative framework, the history of the educational system and particularly its aims and general philosophy. For example, the amount that we in England can learn from what Americans are doing in compensatory education is open to question. England certainly has socially disadvantaged children and some of their problems are comparable. But, one difficulty is to assess how similar the problem really is in social and educational terms, and another is to assess how far American methods and techniques are applicable in a different cultural and educational setting. Certainly, the evaluation of different systems of special education is an important field of study, in the light of all the relevant differences between societies. Comparative Special Education would be not just an academic exercise but a valuable foundation for the inevitable expansion of special education in undeveloped countries.

GENERAL

AN EVALUATION OF SOME INSTRUCTIONAL MATERIALS USED IN A CLASSROOM FOR BEHAVIORALLY DISTURBED CHILDREN

by

Christine Walken

The Engineered Learning Project (ELP), a US Office of Education supported program, has as its major objective the development of procedures for identifying and treating behaviorally disturbed children within the school setting. The program has a behavior modification frame or reference, and is designed to yield information on whether economical, efficient procedures can be developed which will allow school personnel to identify behaviorally disturbed children and modify their behavior within a reasonable amount of time.

This paper presents an appraisal of some of the instructional materials that have been used within the project classroom.

Academic production and its relationship to behavior in the classroom cannot be over emphasized. Teachers are not going to see good, academically oriented behaviors from students who are unable, because of poor skills or lack of ability, to get rewards in the form of grades, recognition, or praise. The Engineered Learning Project staff members have talked about the need to get better reinforcers built into the regular classroom; but perhaps the reinforcers available to us are good enough, and it is the way in which they are dispensed that needs to be questioned. Teachers must learn to use them properly (as social and token reinforcers), and the academic work must be such that it allows every student to receive payoff from the work itself. It is disheartening, to say the least, to see a student's behavior within the ELP classroom gradually change, as a result of appropriate reinforcement and instructional materials, only to have him returned to an environment where the availability of positive reinforcers is often limited. When he returns to this environment his behavior goes unnoticed unless it is objectionable.

Experimental Learning Project Classroom Procedure

The academic work assigned the students in the ELP classroom was prescribed on the basis of the results of achievement tests and a period of individual work with each student, to determine the areas of greatest weakness. Work for each day was assembled in subject folders, which were on the student's desk at the beginning of each day. Each could see exactly what he was expected to accomplish. When a student completed an assignment his work was checked, and he was helped to correct any errors before points were given. Each piece of work had to be completed and checked before he went on to the next assignment Points for programed work were given for working for a specified length of time. Assignments were short, to make possible more frequent payoff, but were gradually lengthened as behaviors improved.

The problem of the demand on the teacher of correcting and providing reinforcement for academic work could theoretically be solved through the use of programed instruction. These programs, however, are still in the early stages of development. There are now on the market many poor attempts at programing, but there are also some good programs that can teach well. A careful evaluation of materials should precede their purchase, but sometimes trying them out on the students is necessary to ascertain the merits of a program.

In an article entitled "Why We Need Teaching Machines," Skinner (1962) says:

> Whether by intention or necessity, teachers have been less given to teaching than to holding students responsible for learning...The student looks, listens, and answers questions, (and incidentally learns) as a gesture of avoidance or escape...The birch rod and cane are gone, but their place has been taken by equally effective punishments (criticism, possibly ridicule, failure) used in the same way; the student must learn or else.
>
> Byproducts of aversive control in education range from truancy, early dropouts, and school vandalism to inattention, "mental fatigue," forgetting and apathy. It does not take a scientific analysis to trace these to their sources in education practice.

The observations Skinner made about the effects of aversive control are well known to us, since nearly every sympton he mentioned is within the behavior repertoire of our group.

Programs Considerations

Of the programs used in our project class, some do measure up to the hopes Skinner has for them, in that they require a minimum of teacher "presence," begin very simply, and develop skill logically and systematically with reinforcement immediately supplied with each step in learning. Good programs also reduce the teacher's time consuming job of trying to dig up or develop materials herself and organize them in a logical sequence. On the other hand, some poorly written programs do not move in a "no steps missed" fashion, and others must be neglecting the reinforcement ingredient, because students become quickly bored by them. Some programs do not teach at all. They are merely interestingly laid out, student corrected material that the student could not have used if he did not already possess the skills they claim to be teaching.

There is not a predetermined pace at which a student should go through a program. If attention stops, so does the program, as opposed to the falling behind that results from a student's inattention to a lecture. However, our subjects initially were apt to just sit and look at the program, or to try "sneaking" in order to fill in the answers without every looking at the text and questions. Whether or not this was due to what Skinner referred to as apathy or mental fatigue, it seemed that some behaviors were prerequisites to using a program. So, until some initial working behaviors were established through consistent payoff on more traditional materials, the programs with one exception, were not as effective as was hoped.

Another drawback in using some presently available programed instruction is that many require a good deal of reading. For instance, a math program appropriate for a boy functioning at a second grade level in that subject may require third or fourth grade reading ability. Often a student who is markedly under achieving in math will be doing even less well in reading. If a teacher has to supply every other word in a program's discussion of arithmetic, she is almost as involved as she would be if she were teaching the lesson herself.

Programed materials are relatively expensive, and unless used in a way that will permit repeated use, the cost of book form programs for large groups may be prohibitive in public school settings. Programs used in machines, of course, can be used many times. Some machines are excellent, but others are flimsy and easily broken, especially by the kind of student we are dealing with.

Evaluation and Discussion of Programed Materials and Procedures

Following is a discussion of some of the programed and student corrected materials we have used, with varying degrees of success, with students in the ELP classroom.

Sullivan Associates Programmed Reading Series, McGraw Hill. This excellent program was used most successfully. It is a thoroughly developed program that can actually teach reading skills, beginning with a prereader, and ending with selections from classical myths at a sixth grade plus reading level. It is suggested that the program be used in conjunction with other materials and methods. The books are accompanied by film strips and hard back books that reinforce the vocabulary. Reading gains made during the eight weeks the program was used were from three months to one year, as measured by the Durrell and Gates tests. Plastic sheets were used to allow repeated use of the programs so that the student can sponge his responses off the sheet. After completing several self corrected pages of work, the student does a "test page." When finished, he raises his hand to have the teacher check his work. This gives the teacher an opportunity to check the student's progress through the program.

The Teaching Machines Incorporated (TMI) Grolier Addition, Subtraction, Multiplication and Division Programs. Used in the Min-Max teaching machine, these were less than satisfactory for our particular purposes. The students were quickly bored by the programs. The machines are made of plastic and are easily damaged. They are too large to be kept on the desk of the student, necessitating movement whenever they are to be used. A TMI Programed Text presenting the same materials is more easily used in the classroom.

California Test Bureau's "Lessons for Self-Instruction in the Basic Skills." These materials range in subject matter from elementary math to "Getting Meaning from Reading." The boys used these booklet form programs with enthusiasm, but the lessons dealing with basic skills really did not seem to teach the skills but did give a novel form of practice in arithmetic. They are "branching" programs in which an incorrect response leads to a review of the misunderstood problem. The reinforcements for a correct or an incorrect response even have "social" earmarks, since they are signalled by a smiling or a frowning face. Student responses are written in separate answer booklets which can be reordered and are indexpensive.

The Cyclo-Teacher. This World Book Company program series and machine offers lessons from simple math to a fairly advanced (grade seven) level of science and vocabulary lessons. The machines are well made. The programs are suitable for extra, or "free time," but the lessons do not go thoroughly enough into any one area. Also, the machines are noisy in use and disturbing to students doing quiet work.

Educational Development Laboratory's Study Skills Library. This is a series of study sets on science and social studies topics. The reading levels are controlled in each set. They consist of study pamphlets, in which, for example, there may be information about "Simple Machines." On the reverse side of each of the booklets are questions, which are answered on a separate answer sheet provided in the set. The student can then select the appropriate answer card to score his own work. The students have used these materials with enthusiasm.

Geography of the United States. This Behavioral Research Laboratories development consists of programed tests and map booklets. Programs are available on the geography of the Central, East and West areas of the U.S. Students in our class who could read at a fourth grade or better reading level used the programs. We found the program to be complete, and of high interest to those students.

Programmed Problem Solving, by Ginn and Company, is appropriate for students who can use arithmetic facts, but who have difficulty with verbal arithmetic problems. The program can be read by students with a low reading level--as low as high first or second grade. The programed test is placed in a plastic binder which has a sliding piece which covers the answer column. Students who seemed to find arithmetic especially aversive could usually be interested in this program because of its simplicity and "nonmath appearance."

Webster Company's Classroom Reading Clinic. This is a collection of materials which students can use independently. These were of special value to us since the study card lessons begin at a 2.5 grade level of reading difficulty, yet are of interest to a sixth grade boy. After completing a short story, the student selects the appropriate answer card to correct his work. The "clinic" also contains paper back novels which the better readers would actually read rather than take free time.

"Dr. Spello" and "Conquests in Reading" Workbooks. These workbooks come as part of the clinic and furnish work in phonics, sentence construction and comprehension skills. This is an excellent set of materials for use in an individualized program.

The Study-Scope. This is an efficient program, and a favorite of the students in our program. The Programs are designed to develop skill in number facts in addition, subtraction, multiplication, and division. For each arithmetic process, there are eight separate designs, each one progressively more difficult. To use, the student slips a program sheet into a plastic tube. The student looks at the equation, and responds by either writing on a response blank, saying the answer, or thinking his answer. The answer window is on the other side of the tube. The students use the honor system to check their own responses, or may use the Study Scope as a member of a team, in which students check each other's responses.

SRA Reading Laboratories. These were appropriate for the needs of our students. The Reading for Understanding Junior was particularly suited to the needs of our poorest readers. The reading selections are brief and are made up of short sentences. This set of material allows for frequent reinforcement for completed assignments, which is especially important during the early phase of a student's treatment in the program.

The materials described in this paper were all obtained for use and evaluation through the Northwest Regional Special Education Materials Center for Handicapped Children and Youth, located on the University of Oregon campus.

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ABSTRACT

THE LABORATORY METHOD OF PSYCHODIAGNOSIS OF EXCEPTIONAL CHILDREN

by

Luciano L'Abate

Increasing demands for psychodiagnostic services and manpower shortage have produced inadequate solutions in the evaluation of exceptional children (shortforms, incomplete test batteries, limited interaction with an examiner, etc.). These shortcomings are compounded by increasing costs and inefficiency of operations. The number of children now being evaluated is small in comparison to the number of exceptional children in need of evaluation.

The laboratory method is presented as a possible way of meeting manpower shortages, increasing costs, inefficiency, and lastly the wide gap between services and research with exceptional children. The components of this method are: (a) standard test batteries sytematically derived to evaluate four major heterogeneous variables (intellectual functioning, visual motor dysfunctions, learning deficits, and emotional adjustment) at various age levels (2-11, 3-6, 5-11, 6-8-11, 9-14-11), (b) these batteries are in the hands of specially trained and supervised assistants who administer and score all tests at a technical level of skill, and (c) these subprofessionals are supervised by a Ph.D. clinical psychologist who is responsible for the interpretation and reporting of test results at a professional level. Examples of such laboratories at St. Louis Children's Hospital, the Crippled Children Service of Georgia Department of Health, Grady Memorial Hospital and Georgia State College in Atlanta are presented in the light of their advantages for: (a) decrease in costs of operation, (b) increase in efficiency, and (c) unification of service with research.

STIMULATING SPEECH IN THE EDUCATIONALLY DEPRIVED

by

Don G. Sandy

The children of this generation are the object of an intensified search to identify all of their special needs through the full span of birth to adulthood. This search is followed by the equally important challenge of meeting these needs. The relatively newest special group of children that is presently the focus of much concern and controversy is referred to variously as: the culturally deprived or disadvantaged child, the poverty child, the inner city child, the language deprived child, the legally deprived child, the potential juvenile delinquent, or the educationally deprived child.

As in the past, with groups of children identified as having special needs, few will agree as to what to call them. From different frames of reference, each of the designations is inadequate in some way since each suggests an inaccurate generalization. The public is left with the impression that the children are the same, which unavoidably and unduly stereotypes them. So, like frogs jumping from one lily pad to the next, the searchers continue looking for a new term that enjoys freedom from severe criticism for a moment, although we know that its popularity will be as short lived as last year's fashions.

Presently, many professional groups are immersed in early childhood searching and programing. There is a substantial block of individuals who assert that if we do not start early in the preschool years we are too late. This assumption has been the impetus for many types of preschool programs operating across the country. These programs are quite important but should not overshadow the need to improve strategies during the school years--which simply means that all the years of a child's educational experiences are significant.

Educationally Deprived

Since, for this presentation, this large population of children is referred to as the educationally deprived, it is necessary to define the term. In general, the educationally deprived refers to children from lower socioeconomic areas who are not prepared with helpful attitudes or skills for school. These children have had little opportunity to develop and expand the language proficiencies mandatory for successful academic performance in our schools as they are presently functioning.

The term educationally deprived is already under fire. To say that the children in the elementary grades of your school are educationally deprived is in essence a statement of self condemnation. Some individuals might rather say that the children are "educational readiness deprived."

These few statements are offered to identify some of the dimensions of the controversy. Unfortunately, the scope of this paper does not permit a fuller exploration of the implications of labeling. Therefore, attention will be directed to the dimension of speech, and comments will be restricted to the undeveloped oral language skills of the educationally deprived, particularly those skills we might term "school language" or formal language.

In addition, some of the aspects of the process of speech and language acquisition and the special problems of development for the educationally deprived will be characterized, and a sequence of activities that might be used for the elementary school age child in the classroom will be described.

Speech and Educational Deprivation

The statement that the educationally deprived are predominantly language deprived does not mean that these children have no viable language modes, that they do not express themselves creatively, or that they have language disorders in the sense that there is an etiology of hereditary, organic, or pathological factors. It can mean that they simply have had inadequate opportunity to learn and to practice the language patterns that are required in order to succeed in school oriented tasks.

The major press to change these conditions has come from the growing block of individuals planning and implementing preschool programs, with an emphasis on enriching the preprimary years with language experiences. These programs in style have extended all the way from traditional preschool models, to a new Montessori focus, to the highly structured programs characterized by intensive drill oriented teaching of language. Most, if not all, of these programs are based on the "early start" assumption.

The basis for the "early start" attitude and supporting reasons for its definition are not unfounded. Let us look at some of the bases for this line of reasoning in reference to the normal process of speech acquisition, and its development in the lower and middle classes.

Research shows that language is first shaped by the parents. Its tone, syntax, sound patterns, and vocabulary are profoundly influenced by these early verbal interactions. Also, the content of the first verbalizations are pervasively influenced by the values of the parents. Then gradually, within the child's expanding reality, the speech is intermeshed with group identification. The group values in turn shape the speech and language patterns. The unfolding speech style of the child intimately regulates his behavior, and this style is critical in terms of his successful interaction in the home and in his immediate peer group. The problem for the language deprived child begins when he extends himself into the school and eventually into the larger community. This is when his particular style becomes handicapping for him.

Research shows that talking for the sake of talking is valued much more in the middle class home than in the lower class home. Because the language in the lower class home tends to center around basic needs such as food, security, and survival, there are fewer pleasantries to be discussed. In general, the parents from the lower class homes prefer not to talk about their substandard conditions. Since these matters are not a primary concern in the middle class home, there is much more time in the day for intellectual pursuits, exploring books and magazines, having discussions, and taking trips.

Referring to the lower class child, Crow and Murray (1966) report:

> The language used in the home by the parents is not supportive to the child on entrance into school, where he must express thoughts or clarify concepts. His language patterns make it difficult for him to relate facts for the purpose of making abstractions. By and large, lower class children tend to use language acquired in their listening to parents, in their reading, and in their other out of school environment.

Another distinction between the two groups in terms of the flexibility of their language code becomes evident when we see that speech develops with a delicate balance of creative expression and conformity. If the child is not told that certain ways of saying things are more acceptable than others, he does not become discriminating, and he feels that the "how" of language usage is not important as long as the desired result is achieved. John and Goldstein (1964), in a study of social context of language acquisition, found that overcrowded homes and the absence of feedback in dialogue with adults resulted in incorrect pronunciation, poor grammar, and faulty word association. Chukovsky (1966) reminds us that a major task of education is to train children to achieve adult levels of good speech. He says further that if the whimsical vocabulary is preserved in a child's speech, his linguistic development will be retarded.

With the overall differences in verbal output and directive feedback, the middle class child accumulates many more "flying hours" for developing school oriented language proficiencies. The middle class child identifies with the broader world and has more to talk about, while the lower class child's world and breadth of verbal output become restricted. Loretan and Umans (1966) state:

> If the school is to be effective, and if these youngsters are not to be discharged into the ever-larger group of unskilled, unemployables, then meaningful, expressive, and receptive language training must become a conscious part of curriculum organization. Inability to speak and understand standard English can make social mobility in our society almost impossible.

It becomes evident that the child's potential for increasing his talking skills will help him to increase the breadth of his contacts and to expand his world, since the essence of culture is considered by sociologists and anthropologists to be preserved and transmitted through its language. No one can argue that the reality of the 20th century is not universality and internationalism, for better or for worse, and that all children should be prepared for it.

With these few thoughts in mind, we need to remember that no child learns to talk in isolation, that other human beings must be stimulating the child with speech, and that this kind of interaction is necessary through all of childhood. We may take the position that when the child enters school, the speech patterns are so established that they are irrevocably unalterable, or we can take the position as teachers that we can build on the language the child knows and help him to learn to speak in ways that will mean greater mobility in the larger society.

Importance of Stimulating Speech in the Classroom

We need to remind ourselves that to increase language proficiency, the process of listening and learning to understand speech is the first and quite crucial phase, but it must be followed by verbal output. It is known that reception and understanding of language is less a problem than talking for the educationally deprived child. There can be many explanations for this, but it is the opinion of some educators that television has been instrumental in developing language reception, but is handicapping for speech since there is no verbal exchange in this one way communication process.

Consequently, it should be remembered that the stimulation of speech needs to be followed by reciprocal verbal responses. The amount and type will be dependent first on the child's intelligence, personality, and native linguistic skills, regardless of class membership, and second on how the teacher feels about talking. If a teacher believes that children should be seen and not heard, and if he is not verbally oriented, it will be difficult to encourage more talking from the students.

In stimulating speech, it is unrealistic to attempt to change total speech patterns. It is probably more realistic and practical simply to plan on adding to them. To do this, it is necessary to challenge the children to use what they already have, and to systematically stimulate further linguistic growth.

I should like to suggest a three phase process of: (a) encouraging verbal output, (b) using the present level, exercising it, so to speak, and

(c) giving the children a variety of talking experiences to apply the new learning.

At this point, it might be well to mention some "do nots." Telling children that they need to speak correct English, trying to teach formal rules of grammar, or trying to teach reading at the same time are questionable and ineffectual. Placing most of the correction time on getting the children not to say "yeah," or other incidental slang words will probably be self defeating. The children should not feel that something will be taken away from them while engaged in the speaking activities; they should feel that they are learning new ways to express their feelings and ideas.

Following the three phases of the activity outlined above, the following are suggested ways in which the teacher might stimulate speech in a class of third grade children.

Suggested Speech Activity

The major goal of the activity is directed toward developing oral language or speech.

To stimulate speech, it is suggested that the teacher use magazines as the basic stimulus material, since they are inexpensive and have clear and colorful photographs of actual individuals and situations. For this particular activity, the usual bill of fare of pictures of animals, elves, and fantastic creatures is not preferred. It should be noted that the magazines need to be carefully selected since certain ones would be inappropriate. Magazines such as Look, Life, or Post are preferable for the pictures in general.

Phase I. After passing out the magazines (hopefully each child would have his own copy), the children should be encouraged to look through them and verbalize spontaneously about them. At this time, the teacher will have an opportunity to note each child's impressions of what he sees and in what way he can verbalize about the pictures. Also, this is an opportunity to note particular differences in vocabulary and syntax. The teacher should ask only open ended questions, such as "Tell me what interests you," "Let's talk about any pictures you see." (Some teachers may want to remove certain pictures before the activities if they seem objectionable.

During this drawing out phase the teacher should look for creative, spontaneous responses and have as many children participating as possible. If a particular child tends to be nonverbal, the teacher may say, "What picture do you like?" "What can you tell me about it?" If the child does not respond, the teacher may say, "What can you name in the picture?" The goal is always to elicit some verbal response.

Phase II. This phase may be approached with the children as a game with some degree of verbal competitiveness that third grade children enjoy. The emphasis is on building and using vocabulary classified as nouns, verbs, and adjectives, following a process of verbalizations from the simple to the more complex. The length of time spent on the phase as well as the whole activity depends on the teacher, but it is suggested that the period at first be no more than five minutes, and then gradually increased. The following is a suggested sequence:

1. "Can you name one thing on the page (chosen by the child?" To another child; "Can you name two or three things?" There are many variations that can be

used. Another possibility is to have two children compete to see who can name the most. The purpose, in whatever variation is used, is to build vocabulary and to increase the quickness of response. The children should be encouraged to realize that things can have many different names, and the teacher should not reinforce the impression that something has only one name.

2. "Find and name all of the things that move." The children look freely through the magazines and explain and discuss their choices. Other variations could be: "Find and name things that cannot move unless someone moves them." "Find things that grow." "Name things that make a sound, things we can ride in, things that will burn, things that are too heavy to pick up, etc."

3. Have a child name something in a picture. Then ask the children to find pictures of things that are smaller. For example, one child names a car. The other children need to find a picture of smaller objects, such as a chair, a man, and so forth.

4. "What can we find that's happening in the magazine?" The children look through the magazine for action pictures. A child raises his hand and holds up a picture. He tells the page number and then says what is happening. The teacher encourages the child to phrase his remarks in a natural way. The criterion should not be that he phrase the remark in complete sentences necessarily. This could lead to superficial and irregular phraseology for oral language and could create a disinterest in continuing. What one child does not say, another will likely be able to add to the remark to rephrase it in a more acceptable form.

5. Role playing with the pictures. The teacher should ask the children to use their imaginations and describe what happened prior to what is happening in a picture, or they might try to articulate what will happen next. The responses may be logical or creative. Another eliciting remark by the teacher might be, "What are the people talking about?" Some children who are reading will respond more accurately if there are captions. Others will have to guess. The purpose of the activity is to get a variety of verbalizations and to approach the materials problematically.

In summary, the overall purpose of this phase of the activity is to develop upward categorization, which simply means that after the children learn new vocabulary they can group it under broader headings. For example, running, jumping, swimming, and walking are all forms of physical activity, or ways of getting to another place. After each activity period, the teacher should note what particular problems the children were having and focus as much as possible on some of the problems in future activity periods. A major goal throughout is to build more complex oral language responses related to real life objects and situations that the children will be likely to encounter in the broader world.

Phase III. This phase may occur immediately after Phase II, or the teacher may elect to choose one activity from this section for another period in the day or the week.

1. Scrapbooks. The children would enjoy making scrapbooks using the pictures from old magazines that are no longer used for Phase II. The pictures may be cut out and placed in the scrapbook according to: free choice, classification of objects or situations, etc. The scrapbooks are useful for conversation periods and for further reinforcement of new vocabulary.

2. *Puppets*. The children can make puppets to act out small scenes. Even though these are very useful for encouraging verbalizations, they frequently can degenerate into a pure motor activity of hitting and clapping of hands unless the children are encouraged to speak for the puppets.

3. *Creative Dramatics*. Like puppets, creative dramatics can be limited unless the children discuss what they might say in the activity. The other problem is that the activity may be indulged in only by the most extroverted children who may need the activity the least.

4. *Conversation*. This can be related to a wide range of activities.

5. *Picture Sequencing*. Cartoons from the newspaper that can be essentially understood by what the characters are doing rather than what they are saying can be cut up and placed in different orders. The children can discuss why the orders are erroneous and can put the pictures into the correct sequence. The emphasis throughout is in putting the reasons for the sequence into words.

Again in connection with picture sequencing, Corbin and Crosby (1965) report a successful language experience for children. The children make a sequence of pictures on a roll of paper and place it in a frame. The pictures may be related to a trip or can be totally imaginative. Each child has an opportunity to narrate a series of pictures to strengthen his ability to recall and discuss a sequence.

Summary of the Three Phase Procedure

In Phase I, free discussion of magazines or selected pictures from magazines are used to encourage free spontaneous verbalizations. During this phase the teacher should identify particular difficulties of language expression.

Phase II elaborates on the magazine activity to build vocabulary and to develop more complex utterances of a nominal and actional quality.

In Phase III, a variety of speech and language activities are planned to utilize new leraning through puppetry, creative dramatics, conversation, and art activity.

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ADMINISTRATION

THE COOPERATIVE SPECIAL EDUCATION PROGRAM

by

Richard J. Kothera

Because of their highly individual needs, not all school age children are able to realize a maximum benefit from the established regular school curriculum. Physical, mental, and emotional differences are thus provided for by highly specialized and stylized programs referred to as special education. Many school districts throughout this country, because of population and financing are unable to adequately provide for specialized needs. Through cooperation of a number of school districts, a well rounded program in special education may be offered these children. Cooperation among school districts extends not only to a verbal commitment, but to a legal, financial, and philosophical relationship as well. By combining the populations of a number of school districts as well as by multiple financing, the formation of multidistrict cooperatives in special education is feasible, practical, and of the utmost necessity in providing well rounded programs adequately staffed and populated, and in maintaining an administrative force for securing stability, equity, and educational responsibility in operation.

Need for Multidistrict Cooperatives

Because of their highly individual needs, not all school age children are able to realize maximum benefit from established regular school curriculum due to physical, mental, or emotional differences. Teachers cognizant of special needs, and of the methodology required to meet them, aid in the realization of human potential through special education services with resulting social adjustment and economic usefulness providing ample return for the investment made by the community in special education. Yet as this philosophy has developed over the years, it becomes apparent that only large school districts have the space, the personnel, and the fiscal stability necessary to establish and maintain well rounded special education programs. While the processes of unification and consolidation have expanded both scope and size of affected school districts, many are still not large enough to adequately maintain a complete program of special education. There exist unified Kindergarten through 12th grade school districts with fewer than 500 children. In some states in the southern portion of the Middle West and Southwest, areas are so sparsely populated it is almost an impossibility to establish and maintain more than a room for housing materials and a sympathetic teacher who attempts to "handle" the problems of those children which cannot be adequately approximated in the regular classroom. If the needs of these children are to be adequately served, specialized programs must be offered them. But at the same time, how is the small school district to care adequately for these needs which, because of lack of enrollment, create a tremendous financial burden for the school district? One means of countering this problem of small school districts, other than consolidation, is the cooperative program, whereby adjoining school districts use the services of special education personnel on the basis of mutual cooperative agreements.

Exemplary in this area are shared speech therapy and psychological services as well as programs for the mentally retarded. Many school districts today, unable to afford the highly specialized personnel utilized in special education programs, have joined together with one district maintaining the paper work and the other school districts reimbursing on a time spent or per pupil cost basis. Yet, if two districts join together in an area such as has been suggested, the type of program resulting still does not adequately meet the needs of all special education children who potentially might enroll in either school district. Another most important question is the direction special education takes. Can two districts afford a director? None have in the past, except to place the responsibility upon a teacher or administrator already functioning full time in another capacity who may lack the sophistication necessary to blend policy, budget, personnel, and facilities to achieve the auspicious results possible in special education. Is there any means available to low enrolled districts that allow the establishment of total special education programs? Perhaps the best answer, unification and consolidation notwithstanding, is the multidistrict cooperative formed to join together enrollments of such size that, regardless of incidence, a total program is possible to meet the exceptionalities of the student population in addition to providing specialized administrative leadership essential to the maintenance and continued growth of the program.

Forming a Cooperative

Certain strategies and tactics are necessary to overcome the intial problems of forming a cooperative. Superintendents are known to be concerned about the loss of authority, financial insecurity, state laws, and such, and one must consider these very real problems of district administrators in establishing a cooperative program. First and foremost, the necessity for such a program and its potential benefits need to be presented. What basically is being established in a cooperative is a marriage in which divorce can be so punishing that it is almost an impossibility, if only from the standpoint of public relations. In the formation of our cooperative program in Kansas, we found much hesitancy on the part of superintendents to commit themselves because, at the time, we had little financial stability due to the initiation of a highly questionable foundation finance plan and the lack of permissive legislation directed towards the formation of cooperative programs. It took a certain amount of politicking, convincing, and propagandizing to get eleven superintendents on the same track.

First, we gained a philosophical agreement on the part of each superintendent that the means of meeting the children's needs were not being accomplished with our present form of "I'll send you my mentally retarded; you send me your emotionally disturbed and in June we'll figure out what we owe each other." We requested -- in fact demanded -- a commitment that the needs of all children must be met. Surveys were taken and the entire program discussed with our very capable state director, Dr. Jim Marshall, who greatly encouraged us. After four years of operation we can only say that the cooperation, encouragement, and understanding of our problems by our State Department made it possible for us to establish and maintain the cooperative.

The cooperative was formed via contract and contains basically four elements:

1. Ground rules used to establish and maintain the program such as: Who will sponsor the program? Who was eligible to participate? In our case, policy is established through a quasi board of education which we refer to as the board of directors.

2. Operations - this concerns the director of special education and

establishes duties and reimbursements as well as the hierarchy under which he operates.

3. Facilities - In the cooperative program the facilities are widely scattered and basically consist of free classrooms in elementary schools around the area. It establishes a rental plan for these classrooms which is paid for by the cooperative in terms of credit on a yearly bill.

4. Finance - the contract spells out the financial duties of the sponsoring district in regard to maintaining fiscal responsibility for the cooperative and establishing administrative fees for the administration of the program and operational fees which basically reimburse teachers, teachers' aides, purchase equipment and materials.

All school districts who wish to become a part of the cooperative then enter into a legal contract with all other school districts for the establishment of the cooperative.

Did we have a law on the books which specifically allowed us to form a special education cooperative? The fact is that it was not until two years after the formation of our cooperative program that a few people questioned the legality of the cooperative, and a bill was sponsored in the Senate which allowed the formation of special education cooperatives. However, the program was legally established without a specific law for one good reason: the formation of a cooperative is a contractual obligation upon boards of education. The only legal basis necessary is that boards of education be legally endowed with the right to enter into contractual arrangements with other boards of education; or less specifically, that boards of education are allowed to enter into all types of contractual obligations. This law has been in Kansas for a long time and is used every year by boards of education; thus the necessity of establishing a special law perhaps will satisfy the purists, but it is not a legal necessity.

Establishing the Board of Directors

Once the contract was signed, the board of directors was established. There are several ways to establish a board of directors for cooperatives. It may be operated with lay citizens by appointment, with elected members representing boards of education, or with superintendents of cooperating school districts. In our case, the board of directors was made up of the superintendents of cooperating school districts with the idea that within several years this would slowly transfer to a board of directors composed of school board members representing the cooperative districts. At the present time, not one member of a board of education sits on the board of directors; the board is still made up of the superintendents of the cooperating districts. Our director seems to prefer it this way in that he feels his work is less difficult and the amount of sympathy he receives from fellow administrators is much greater than if the board of directors were made up of lay citizens or of members of cooperating school districts' boards of education. This may be true; however, it is important to consider the possibility that more rapid development in the cooperative would be possible with a board of directors who were not superintendents of schools. Because of the problem of vested interest and salary schedule competition, and since the cooperative is maintained as an entity unto itself, with the board of directors operating as a quasi board of education, perhaps it would be well to do away with that sometime shadow called vested interests by doing away with a board of directors human enough and competitive enough to hold down one area in hopes of developing another. This situation will not always present itself but it is a potential problem in any cooperative, as well as in any special education program. Since special education, as a highly particularistic field of its own, could very well take a backseat to other programs and not be funded proportionately to support innovation, research, development, and investigation, and perhaps a cooperative program, as it is operated under a board of directors, it could possibly operate more freely with even more adequate financing by operating with a lay board.

Financing

Special education is more expensive per pupil than regular education, even if nothing more than enrollment is considered. In the past, special education for students who were orthopedically handicapped, blind, partially seeing, deaf, and hard of hearing required special equipment which was expensive and still is expensive today. However, the difference in cost between special and standard educational equipment is not what it was fifteen or twenty years ago, since regular education has entered into a purchasing era of electronic equipment. The classroom cost of equipment has increased tenfold over what we normally spent in the past, so the mechanical and electronic area of special education expenses have basically decreased in their relationship to the cost of maintaining a regular classroom, since the regular classroom is no longer devoid of its share of mechanical and electronic equipment. However, costs still accrue disproportionately due to special transportation, facilities, and the levy of administrative expenses as well as teachers salaries over a limited number of children. Yet this is offset by increased financing on the part of the state which in many areas provides additional funds for the maintenance of specialized educational programs. In addition to this, there are also incentive plans by various state departments which encourage the formation of a cooperative in special education. In Kansas, a district that takes students from another school district for the purpose of special education is paid $100 per out of district child. In a cooperative such as ours with an enrollment of approximately 260 students of which our district only furnished approximately 25, $23,500 immediately accrues to the cooperative because all students other than the sponsoring district's students are out of district.

Those who are familiar with Kansas and Kansas educators probably have heard a number of disparaging remarks made about its foundation plan and its 104 percent limit. In arriving at the formulation for this foundation plan, Kansas legislators must never have considered special education, and if they did, they deserve praise because they have funded the state very well for a cooperative program.

Money accrues to the cooperative in the state of Kansas in several ways. First, several thousand dollars per program is funded by the department of special education plus reimbursement for a proportionate amount of supplies and equipment. In addition to this, $100 is paid per out of district student in special education. Also, the state foundation program pays a certain sum of dollars per teacher to the school district and that sum of dollars is dependent upon the amount of training the teacher has, with the highest amount paid for the teacher with the most graduate hours. Educationally, teachers in special education are proportionately more highly trained than the average faculty. Also, our cooperative program transports all children and figures transportation from the home to the sponsoring district, and additional money accrues through this.

There are drawbacks to our foundation plan. Since the pupil teacher ratio is a factor, the ratio in a district could fall under the minimum standard mandated by the state, which means a reduction in foundation monies, and an increase in property tax. However, the cooperative maintains that the sponsoring district will only incur normal financial obligations acquired by cooperating districts, so it will not be hurt by a lowering of their pupil teacher ratio. We compile two budgets, one for the school district without the cooperative sponsorship and the other with it included If the difference is negative, it is paid by the cooperative to the sponsoring school district. If the difference is positive, it is paid by the sponsoring district to the cooperative program. This puts the cooperative on its own financial feet and operates as fiscal financial security for the sponsoring district.

In addition, funds are received from participating districts. At present these funds cover administration and operation. Administration costs are figured by dividing total costs into total school enrollment of the cooperative, which results in a cost of 70 to 80 cents per pupil, paid as a participation fee once a year to maintain the director's office, secretarial salaries, equipment, maintenance, and materials. The second fee paid by districts is the per pupil assessment. After state monies are figured, the remaining costs of the total number of programs is computed and divided by the number of children. The result is per pupil fee of approximately $400. So, if a school district has twenty children in the program and an enrollment of 2,000 children in their school district, their total cost would be $8,000 as the total per pupil assessment plus $1,400 participation fee. That school district thus has any one of a number of programs to place children, in addition to psychological and administrative services for the relatively low cost of $9,400 a year to the participating district.

The cooperative program presently maintains the following classes in special education in Northeast Johnson County:

Table 1

No. of Classes	Area	Students
1	Primary Trainable Mentally Retarded	8
1	Intermediate Trainable Mentally Retarded	8
3	Primary I Educable Mentally Retarded	33
3	Primary II Educable Mentally Retarded	33
3	Intermediate I Educable Mentally Retarded	31
3	Intermediate II Educable Mentally Retarded	33
2	Primary Learning Disabilities	18
3	Intermediate Learning Disabilities	33
1	Primary Emotionally Disturbed	10
1	Intermediate Emotionally Disturbed	5
1	Primary I Hard of Hearing	8
1	Primary II Hard of Hearing	9
1	Intermediate Hard of Hearing	8
1	Primary Orthopedically Handicapped	7
1	Itinerant Program, Visually Impaired	
2	Homebound Fulltime Teachers	15
3	Homebound Parttime Teachers	
	Total Number of Children Served	259
	Staff	
	Total number of Teachers Serving	31
	Total number of Administrators	2
	Total number of Psychologists	2
	Total number of Noncertified Personnel	2
	Total Staff	37

With approximately 260 students enrolled, we have what we consider an excellent beginning program that adequately provides for a large number of students who need specialized programs to meet their needs. In addition to these programs there are hospital and home bound programs with administration by a director and his assistant. Two secretaries serve the administrators and two psychologists. The total cost of this program is just over $300,000 per year including both state monies and participating district fees. The program serves approximately 260 children in classrooms and approximately 425 children per year including money spent for psychological testing for children who do not enter into the program, hospitalized and home bound, as well as itinerant visually impaired children.

The cooperative program in turn cooperates with other area programs. For instance, Kansas City, Kansas, places its primary orthopedically handicapped children in our program. In turn, we place our intermediate children in their program. Both programs are housed in the same facility which happens to be the University of Kansas Medical Center, Children's Rehabilitation Unit.

Additionally, students are taken into the program from districts that have not joined the cooperative. These districts pay a special rate of approximately $900 per year. The tuition is paid by the school district sending the child.

A number of cases have arisen where nonparticipating school districts were unwilling to pay the tuition fee while the parents were extremely willing. However, our rule and our philosophy of special education services, as an obligation of the school district, has been maintained by allowing tuition fees only from districts, not from parents.

The same is true of transportation fees. We contract only with school districts, not with parents. What agreement or arrangement is reached between each school district and parents of exceptional children is up to the school district, not to the cooperative.

Since we have a parochial enrollment in the area, parochial children who need special education facilities transfer back into their public school district and from there are placed in special education.

Problems

Any cooperative program as well as any program in special education has certain problems relative to the fact that operations in special education are somewhat different than one finds in either elementary or secondary education.

Transportation is perhaps the largest problem in our cooperative program even though our children do not travel relatively large distances. We exist in an area of approximately 80 square miles with the majority of children being bussed to their special education classrooms. It is amazing that a simple thing like bus transportation, which has a minute part to play, can have such tremendous impact upon this program. Many of the children are picked up at their home, delivered to the program, and returned to their front steps. Some are carried up those steps. The overriding philosophy is basically to get the children to class. Since the placement of classes is dependent upon elementary schools where rooms are available, few children are placed within their own local area. In fact one finds children traveling ten miles one direction. Since the bus route of each bus is dependent upon a particular class, the child could easily travel 50 miles before getting to school, he thus could travel for over one and one half hours. We have managed to change the bus company's thinking on this problem to the point that no child travels more than one hour. Probably the majority of problems with transportation relate to the caliber of personnel driving buses, since the special needs of the children must be considered. For instance, some drivers fail to pick up children or the driver has not been informed that the child to be picked up is orthopedically handicapped and therefore the bus driver arrives at the home, sits in the bus and waits, while the mother of the child is inside the door with the child in a wheelchair waiting for the bus driver. Due to lack of communication the child is not taken to class. One bus driver could not make his scheduled run because he was taking his own child to school using the school bus and the child wasn't allowed in the building prior to 8:30 in the morning; therefore, until this problem was solved this bus was running thirty to thirty five minutes late every day.

It would seem that in establishing a transportation program for a cooperative there is the choice between having transportation arranged by the cooperative program or having it handled by the parent, and from what we have seen, the majority of parents are willing to assume this responsibility. In a number of cases, with the children in my own district, when an impasse has been reached between what potentially can take place in bus transportation versus the desires of the parent, the child has been taken out of the bus transportation pool and his transportation handled by his parent.

Another problem is whether or not there should be a fee for transportation. We have a number of arrangements according to the policies of various cooperative districts in Kansas. There is no policy in the cooperative as transportation is left on a fee or free basis with each district. Some districts pay the entire fee which is high compared to the transportation of nonexceptional children. Others mandate the same payment for exceptional children as for the nonexceptional. In my district, parents of both exceptional and nonexceptional children are expected to pay $6.50 per month for transportation with the district paying the remainder. Of course, transportation of the nonexceptional child costs much less than transportation of the exceptional child, but our decision was for equity.

Additional problems are found in the administrative area, and these relate to the director's relationship with the board of directors. They have not clearly defined for our director his responsibility and his relationship to the board. The resultant confusion is being cleared up by an adequate set of policies, rules, and regulations. Also in dealing with a ten member board composed of school administrators, the director must deal with a power structure and, depending upon the item under discussion, the power structure changes.

Other problems relate to the duties and functions of the director of special education for the cooperative. In Kansas, our director has a long distance to travel to reach program after program. Yet basically the director is also a supervisor, and until the program reaches that degree of sophistication at which supervisors become operational in the program, he must operate as a supervisor. Yet at the same time he is held to his office by finance, transportation, and relationship problems, and literally the director has to fight his way out of the office and into the classrooms, because this is what superintendents expect him to do. It seems that superintendents want to get directors of special education into the supervisory role. Yet the director has a special problem. His faculty is spread throughout the cooperative in various buildings under the jurisdiction of principals. If the special education teacher identifies with the faculty and administration of the building, the teacher is prone to program changes that relate his class more towards the accepted practices and principles inherent in the building, which may be detrimental to acceptable practice in special education. If the teacher relates to the special education director, the teacher risks isolation from the building faculty and perhaps illicits unfavorable responses from the building principal. The quandary exists whenever supervisory control is lacking and programs are spread over large geographical distances. But even in a well balanced program where individualized special education programs are coterminous, nuances that limit the alternatives of choice both for the teacher and the director can exist and result in a limiting of administrative sufficiency and efficiency.

Conclusion

Basically the philosophy behind our program has been that special education services can be provided for all children regardless of the size of the school district. Student population and geological area are problems, but are not impossible to overcome. Through a cooperative arrangement, we are well on the road to providing for individual differences regardless of what they may be. This same program is feasible in any state, as long as there are administrators willing to cooperate one with another in a democratic fashion with the ultimate aim of helping all children in the satisfaction of their needs.

THE SEATS GAME
AN EXPERIMENTAL INSTRUMENT

by

Daniel D. Sage

School programs for exceptional children have experienced tremendous growth during the past two decades. As in many other aspects of the educational community, growth has been accelerated by the input of federal funds. From the modest beginning in 1958 under Public Law 85-926, authorizing an appropriation of one million dollars for personnel preparation, subsequent amendments have extended and increased authorizations covering both research and demonstration, and personnel training, until the amount for the award year beginning September, 1969, totals 37.5 million dollars.

The proliferation of public school programs concurrent with this stimulation has created increasing attention to the need for competent administrative personnel to provide leadership at all levels and in a wide variety of organizational structures. This need is felt in the local school system, cooperative programs covering broad geographic areas, the state education agencies, various federal offices, and in both public and private residential schools. The administrative roles range from rather specific or circumscribed responsibilities for supervision in a single area of exceptionality to broad involvement with comprehensive services for a wide variety of exceptional children.

While it is clear, therefore, that no single job description can approach adequate coverage of the field encompassed by the term "Administration of Special Education," an attempt to respond to the need has been manifested in the inclusion of an "Administrative Area" in the federally supported training programs in special education. Program development grants have been awarded to encourage university training programs in this area, and post master's degree fellowships available have been increased so that during the 1967-68 academic year approximately 61 administrative fellows are studying in special education departments of 12 colleges and universities with approved funded programs, while an additional 26 fellows, whose awards were granted through State Departments of Education, are studying at a total of 19 institutions.

In considering this rapid increase in program development, it is immediately apparent that there is a lack of the basic tools and guidelines generally associated with training programs. As Willenberg (1964) has pointed out, "After more than a half century of public school programs for exceptional children, there is still no single source of comprehensive information providing a rationale, structure, and process for the administration of special education programs. Colleges and universities are preparing leadership personnel without the basic tool of such instruction - a textbook on the subject." To this time there remains a lack of clearly defined criteria for selection of training personnel in this field, an established curriculum for such training, and, perhaps most crucial, a lack of validated description of the competencies required in the administration of special education which are discriminable from those inherent in any other type of administration.

Simulation as an Approach

Recognizing the need for both an instrument for studying administrative behavior and a vehicle for conducting a meaningful training program for students already enrolled, the author has developed a set of materials utilizing the simulation model and pertaining to one of the many roles subsumed under the general term, Administration of Special Education. The development of the materials, which came to be known as the "Special Education Administration Task Simulation (SEATS) Game," was supported by a grant from the USOE, Bureau of Education for the Handicapped (Sage, 1967). The choice of the simulation model was predicated on the belief that the study of administrative behavior in actual situations imposed severe difficulties due to the impossibility of providing either standardized or controlled conditions. Further, as a training approach the success of simulation has been documented by Culbertson (1960), Hemphill, Griffith and Fredricksen (1962), and by Weinberger (1965). A previous endeavor dealing with the application of simulation to special education administration was reported by Ray L. Jones (personal communication) in which the basic "Whitman School" material of Hemphill, Griffith and Fredricksen (1962) was modified to include an integrated program for the deaf. This material has been utilized in workshops focusing on the problems related to the administration of such programs. However, the orientation is from the viewpoint of the elementary principal rather than from that of the central office administrator and is limited to that one type of special education program.

The conclusions drawn by Weinberger (1965), in his evaluation of the simulation approach, pointed out the chief strength as being "high student involvement and motivation; provision for skilled practice in a real, but controlled situation; opportunity to compare administration behavior; and a change to test theories on real problems." The weaknesses reported were largely concerned with technical aspects of the utilization of materials. Recommendations for improved use of simulation included the provision of feedback on consequences of decisions made, particularly by a branching programed system of either a machine or manual type; the provision of greater realism through filmed problems in which the participant is a part; telephone recording and playback systems which would reduce the unrealistic amount of written responding which has been necessary in existing systems; the provision for administrative team approaches and group decisions. In the development of the SEATS Game the provision for such improvements was seen as a major objective. It was also considered necessary to orient the materials to a specific role which would have greatest applicability to the field in general, either through the selection of a role which exists in greatest frequency in the field or a type which carries the greatest degree of common elements with other roles so as to provide for maximum transfer.

High priority was also placed on the production of materials which would permit maximum utilization of the particular advantage of the simulation concept, i.e., realism within a standardized and controlled practice setting. The aim was to allow students and practitioners in the field to assume a role in a simulated special education directorship in a school district with given characteristics, in which they could react to problem situations presented in a standardized manner. In order to gain maximum realism, a simulated environment was created with sufficient background information so that participants could play the role to the hilt.

An additional prerequisite to the relevant utilization of simulation in a training program was the development of an assessment instrument for measurement of change in participants as a function of exposure to the training program, as well as a system for recording and classifying the responsive behavior of participants during the actual training process. An experimental edition of materials designed to reach these objectives is described below.

The SEATS Game

The SEATS Game consists of both background material and task inputs demanding problem solving activity. The materials utilize both written and audiovisual media with the major input of tasks taking the form of a communication in basket, supplemented by telephone calls, filmed classroom observations, and role played conferences. The content was selected with the objective of broad sampling of situations confronting the director of special education in a medium sized and typically organized administrative structure involving a comprehensive program of special education services.

The background material was designed to provide a realistic framework from which decisions and actions could be determined. Information is provided to establish both factual data and general feeling tone in order to enhance the participants involvement in the problem situations. Unlike previous school district simulations, the environment for the SEATS Game was not taken directly from any existing locality, but represents a composite of a number of real places and organizations. This composite resulted in a school district of sufficient size to guarantee the existence of children of all types of exceptionality, yet too small to permit independent operation of programs for some of the low incidence types of handicaps, and therefore, requiring cooperative arrangements which are characteristic of many actual special education organizations, and which constitute a major source of the problems peculiar to special education.

In recognition of the fact that community socioeconomic conditions have influence on the development of special education, the background materials were contrived so as to present issues for consideration most representative of those facing the greatest number of persons in the field. State laws and administrative regulations were simulated to represent a composite of those to be found in states occupying a high average position in terms of sophistication and development at the state level, but leaving noticeable room for growth and improvement.

The background material introduces the participant to the role of "Lee Blank" who has just accepted a newly created position as Director of Special Education in the Dormit Central School District (so named to befit its status as a "bedroom" community) in the suburbs of the city of Metropolis, an industrial seaport of a half million population in Jackson County, state of Lafayette.

An orientation packet contains a term paper entitled "Cultural Influences on the Development of Special Education in the Dormit Central Schools" which provides basic information as to the current status of the program and its relationship to the main stream of education in the district. Another document is the "Special Services Handbook" which serves as a guide to policies and procedures currently in effect dealing with the program, while a third document entitled "Education of Handicapped Children in the State of Lafayette" establishes the legal framework within which Lee Blank and the Dormit School District must operate. Other written material in the orientation packet welcomes Lee Blank to the district, provides updating information as to program statistics and personnel, requests an evaluation of the present status, and invites some preliminary goal setting.

A slide set with a tape recorded commentary to be used with participants after they have had an opportunity to study the written material serves to reinforce both the cognitive and affective impact of the orientation packet. Maps, organization charts, and program descriptions supply the role player with basic factual data approximating that which newcomers in an actual position would have. The audiovisual media, including taped conversations between significant colleagues in the environment and in which Lee Blank is a passive participant, exposes the role player on the affective level to the social psychological environment.

The task materials utilize a variety of media, with the written communication in basket (letters and memoranda) carrying the major load. Additional problem input is provided through telephone calls which Lee Blank receives from various teachers, administrators, parents, and ancillary professionals, posing a variety of problems on which decisions as to processing must be made. Assistant Instructors role play the initiator of these telephone conversations, following an introductory script with a general outline of alternative branches to follow depending on Lee Blank's response to the initial situation.

Materials are provided to initiate two case conferences in which Lee Blank must moderate a discussion between significant personnel concerned with reaching a decision as to the placement of certain children in the special education program. Additional audiovisual input is provided by 16 mm films of actual classroom instruction in five different settings involving five types of handicapped children. In each observation, participants are expected to practice observation skills, to carry out an evaluation of what they have seen, and to complete a written statement and/or a live supervisor teacher conference about the observation.

Utilization in a Training Workshop

Various parts of the SEATS Game had received informal testing during their development with students in seminars in administration of special education during the academic year. The total package was utilized for the first time in a two week workshop during Summer Session 1967. Twenty-one graduate students who had either recently assumed or expected in the near future to assume responsibility in an administrative position in special education were enrolled in the workshop. The group represented considerable experience in education, though with two, this had been limited to experience as school psychologists. Eighteen had previous experience in general classroom teaching, sixteen in special education teaching, but only four had had experience in general educational administration. Nine had previous experience in special education administration but in only two cases was this experience for more than four years.

In terms of previous training, all were trained to a certification level in either elementary education, special education, or school psychology. Most had some previous training in special education, with thirteen having considerable training (22 semester hours or more). Previous professional training in school administration was much less in evidence with only eight having any training and none of these over 21 semester hours.

The workshop content was organized to deal with issues in the administration, supervision, and coordination of special education programs in public school districts. The group met for 5 1/2 hours daily for nine days and the SEATS Game was used as the central core of the entire workshop. Lectures and discussions dealing with specific topics were interspersed within the five packets and activities of the SEATS Game in a manner which permitted maximum correlation between the formal topic and the simulated situations. Content of specific lecture discussions included such topics as "Varying Roles in Administration of Special Education," "Organizational Structure for Administration," "Criteria for Evaluation of Adequacy of Services," "Supervisory Relationships Under Shared Responsibilities," "Observation and Analysis of Classroom Behavior," "Physical Facilities for Special Education," "Pupil Placement Procedures" and "Ancillary Services to Instruction".

Two instructors and a number of parttime research assistants were involved in the presentation of formal material, the handling of responses to written and oral aspects of the SEATS Game, and the leading of the feedback discussions which followed each of the five packets on which the participants worked when role playing the Director of Special Education.

A special instructional communications facility in the Newhouse Communication Center at Syracuse University was utilized for this workshop and provided particular advantages for the SEATS Game. The room contains desks with individual telephones for up to 25 participants. The telephones are tied to an internal dialing system and to two tape recording decks so that two telephone conversations can be monitored and/or recorded simultaneously from a control booth adjacent to the room. In this manner, the instructors who role played the "Significant Others" in the simulated environment were able to call each participant sequentially, interrupting his work on the written items of the in basket and presenting with an optimum degree of realism the kinds of problems which the telephone brings to all administrators. Over the period of the workshop each participant received at least eight of the twelve possible telephone calls included in the SEATS Game. As a part of the feedback discussion after each work session the staff was able to select certain phone conversations for playback to the total group for analysis and illustration of possibilities inherent in a variety of alternative reactions.

This facility also permitted showing of films, recording of group conferences involving committee decision making, and the recording of live teacher supervisor conferences which followed the classroom observation films, utilizing "simulated teachers" who role played the teacher who had been observed on film.

Of primary consideration in the entire activity was the maintenance of optimum realism for the participant while achieving maximally complete data recording of all behavior for research purposes in the analysis of the simulation game as an instrument in studying administrative behavior.

Evaluation

In the development of the SEATS Game, a number of approaches to analysis were considered and attempted on an experimental basis. The scope of this article does not permit discussion of all these procedures. However, the instrumentation utilized to measure the effects of the workshop warrants description.

A behavioral choice test, with two alternate forms had been prepared to be used as a pre- and posttest in such training situations. The test followed a simulated written communication format. Four written communications are addressed to a director of special education, coming from a subordinate (teacher), superordinate (superintendent), and extraorganizational persons (two parents in different relationships to the director), posing a variety of problems to be handled. A series of possible alternatives for handling each of the problems is presented with the subject required to indicate his degree of agreement or preference for each alternative by checking a Likert type scale for each alternative. The 44 items of each test were initially developed and organized into subscales to assess the emphasis placed by the respondent on ten interpersonal relationship dimensions in problem solving.

The theoretical construct on which the test is based lies in the hypotheses that in his interactions with others in the performance of his job, the special education administrator is required to utilize in comparison with other educational administrators:

1. Greater involvement with groups of persons (Team) rather than with one person at a time or in independent activity

2. Greater involvement with persons representing disciplines or professions other than instruction (Multidisciplinary) and, therefore, relatively less involvement with activity limited to instructional personnel only

3. Greater involvement with persons on the same level of the administrative hierarchy (Horizontal) and, therefore, relatively less involvement with subordinates and superordinates

4. Greater involvement with persons in other departments of the administrative organization (Interdepartmental) and, therefore, relatively less involvement with persons within an immediate department

5. Greater involvement with persons who are outside the administrative organization (Extraorganizational), both lay and professional individuals and organizations.

The basis for these hypotheses and a more extensive analysis regarding them are reported elsewhere by Sage (1967), but the use of the pre- and post-forms of the test in connection with this workshop served as one indication of behavioral change over a treatment period.

An additional vehicle for assessing the value of the SEATS Game took the form of an opinionnaire to be completed by subjects at the close of the workshop. This was designed to get at such factors as the relative values of each part of the simulation game, the degree of realism provided by the materials, the amount of time and emphasis placed on each part, the instructional approaches used in conjunction with the materials, and an overall subjective appraisal of the entire workshop.

Results

The effects of the utilization of the SEATS Game in this training workshop can be considered under two general categories, (a) the objective data from the pre- and posttest scores and (b) the subjective responses to the opinionnaire.

While the validity of the ten scales of interpersonal relationship dimension is open to question and will require further study, the overall change from pre- to posttest of the workshop group as compared to the control group provides evidence that the workshop experience did indeed bring about change in the way participants approach the solution of problems.

Responses to each item of the test could range on the Likert type scale from 1-5, with a 3 indicating neutral or intermediate level of preference for a particular alternative. On the pretest it was found that both the workshop and the control group made choices which averaged on the "stronger preference" side, with the total test mean for the workshop being 2.47 and for the control group 2.59. These differences between the groups are nonsignificant. As Table 1 illustrates, only one of the subscale scores, the same scale for each group, yielded a mean beyond the neutral position of 3.00.

Table 1

Mean Scores on Pre- and Posttesting
by Scales and Total Test

	Control Group (N=10)			Workshop Group (N=21)		
Scale	Pretest X	Posttest Y	t	Pretest X	Posttest Y	t
Independent	3.50	3.10	1.33	3.27	3.69	2.42*
Dyadic	2.57	2.72	.83	2.58	3.26	5.44**
Team	1.87	2.05	1.25	1.58	1.95	2.31*
Intradepartmental	1.90	1.83	.30	1.82	2.41	4.96**
Interdepartmental	2.22	2.57	2.07	2.12	2.55	4.10**
Extraorganizational	2.42	2.62	2.14	2.13	2.54	4.78**
Multidisciplinary	2.19	2.94	5.45**	2.02	2.71	6.17**
Instructional	2.46	2.58	.66	2.37	2.82	4.66**
Horizontal	2.50	2.65	.52	2.69	3.00	1.98
Vertical	2.36	2.77	2.33*	2.35	2.97	5.29**
Total Test	2.59	2.70	.84	2.47	2.84	5.32**

*Significant at .05 level.
**Significant at .01 level.

Upon posttesting, the resulting mean scores for each group were compared to the pretest and the differences in means subjected to a t test for correlated measures. As Table 1 indicates, the change in mean score on the total test from 2.47 to 2.84 for the workshop group was significant at the .01 level. Likewise, seven of the subscale changes were significant at the .01 level and two more were significant at .05. By contrast, the control group showed no significant change of mean on the total test, one subscale change significant at the .01 level,and one at the .05 level.

Scrutinizing the direction of the change scores which were significant leads to some interesting conclusions. It was found that contrary to expectations the workshop experience did not cause participants to be more prone to choose avenues of interpersonal relationships which were consistent with the aforestated theoretical constructs regarding the administrative role in special education. That is, they did not show stronger preference for team interactions, interdepartmental interactions, extraorganizational interactions, multidisciplinary interactions, etc. Instead, they showed a definite change toward a neutral position throughout the test, indicating less strength of preference for any of the alternatives.

This change is interpreted as an indication that participants bacame more cautious in committing themselves to any alternative avenue of interaction and more prone to consider multiple ramifications of an issue and, perhaps, to delay judgement. In this regard, it was noted that the participants took much longer to respond to the posttest, even though practice with the familiar format should have allowed more rapid response. When questioned about this, subjects were quick to acknowledge that the workshop experience had caused them to consider more carefully all of the issues involved and to be less certain of shooting from the hip.

The opinionnaire, which was completed by participants anonymously at the end of the workshop,consisted of 15 items, 10 of which pertained specifically to the simulation approach with the remaining ones dealing with more general aspects of the workshop. A summary of the responses to the opinionnaire would indicate that almost all of the participants felt that the use of the SEATS Game had been a highly appropriate and valuable approach. Most felt that the in basket items were outstandingly or fairly realistic and that the proportion of emphasis on simulation within the workshop had been optimal. There was an expression of feeling that greater time could have been spent on followup discussion of the simulation activities but that the distribution among the various types of activities comprising the SEATS Game had been appropriate. It was felt that a greater emphasis on the oral communication situations and role playing in group conferences would have been desirable and that more time to devote to study of background material prior to attempting problem solving would have been desirable also. However, no one suggested that there had been too much of any one thing, so to extend time on any one activity would necessitate adding time to the total workshop.

Most felt that the classroom observation films, the role playing of group case conferences, and the telephone calls had been valuable and a realistic or very realistic experience. The minority who considered these situations somewhat unrealistic still attested to their value within the framework of training. There was unanimous agreement that the overall value of the workshop was extremely worthwhile. Responses to an open ended item at the end of the opinionnaire were highly lauditory, and suggested ways of extending the total time for future workshops in order to go into greater depth on some aspects of the total experience. The group was also unanimous in its expression that the daily schedule had been satisfactory and that the 5 1/2 hour day had not been too long, given the variety and flexibility of activities that were included.

From the point of view of the instructional staff utilizing the materials, there was confirmation that the aspects having greatest value were those involving live feedback such as the face to face conferences, both group and dyadic, and the phone calls. Unfortunately, these are also the activities which impose the greatest complication in terms of time and staff utilization for groups even as small as 20 participants. Evaluation of the tape recordings of these aspects, which was largely subjective due to having only crude and limited analytic systems for this material, suggested that these activities were providing an anxiety producing but generally appreciated opportunity for the participants to play a role in which communication and awareness of the other person were the key factors in coordination, mediation, and persuasion. It was clear that the pressure existing in these situations influences responses on the part of the participants which are worthy of analysis on many more dimensions than those which have been developed thus far for using the SEATS Game as a research tool.

Fielding difficult problems coming from difficult people was seen by most subjects as a much needed and rarely available experience. One effect of the experience is perhaps best demonstrated by the comment one participant added to the end of the opinionnaire form stating:

> I know I'm a good EMR teacher and because I've been asked by my Administration to help new teachers, I'm willing. I also know - this course helps me to make up my mind - I do not care to be a Lee Blank. However, I have gained insight into administration and the problems involved.

The implication of this statement, when one considers the manner in which many persons move into the ranks of administration, may be of unforeseen relevance for the application of simulation procedures to training programs.

Conclusions

The findings from this application of simulation to a special education administration training workshop, when one considers the reports of previous uses of the technique, are certainly not surprising. It would seem that the simulation game is a "sure fire" technique, particularly when confronted by persons who are relative novices to the field. The significance of its contribution at this point lies in the fact that the materials described herein may provide a vehicle for training and an instrument for behavioral research in a field so far lacking in directly relevant tools. There is no question that the vehicle is at this point crude, but it is a beginning. On the assumption that the basic process of administration in special education would vary only slightly from that in other administration and can, therefore, depend upon using general administrative knowledge as a foundation, the additional specific content and specialized approaches provided by the type of workshop and materials described herein may do much toward preparing personnel to fill the role.

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A COMPREHENSIVE EVALUATION, THERAPY AND ACADEMIC TRAINING PROGRAM FOR HANDICAPPED CHILDREN IN A SPARSELY POPULATED STATE

by

Everett D. Peery

Presented here is a brief description of a comprehensive evaluation, therapy, and academic training program for handicapped children in a sparsely populated state. This program is not comparable to the tremendous programs in existence in some of the larger states and cities, but it is a program which is somewhat unique.

Some background about the state of Montana is needed. Montana is the fourth largest state in the United States with a population of slightly over 700,000 people, giving it a density of about four and one-half people per square mile. The people in the state of Montana retain a great deal of the pioneer spirit.

Special Education Program

The Special Education Program has grown very rapidly in the last few years. The school systems in the state provide 92 classes for educable mentally retarded, seven classes for trainable mentally retarded, and ten of the school districts hire speech therapists. Additional speech therapy is provided to some schools through the Elks Mobile Speech Program and the Easter Seal Speech Centers. There is one class in the state for hard of hearing children and there are five classes for the physically handicapped. There is a state residential institution for the mentally retarded and a state residential school for the deaf and blind.

The Montana Center for Handicapped Children was established in 1947 as a Center for Cerebral Palsy. At that time it provided only speech therapy and physical therapy for cerebral palsied children in five counties in the state. Since then it has developed and evolved into a somewhat more comprehensive program. Since 1955, it has been called the Montana Center for Handicapped Children and is sponsored by three agencies including the Montana State Department of Health, which is primarily concerned with the medical clinical programs and provides the salaries for most of the Center staff as well as a large proportion of the operational funds. Eastern Montana College, which is concerned with the teacher training aspects of the program, provides some salaries and operational funds as well as the housing for the Center in the College Administration building. We are, at the present time, looking forward to the construction of a new building which we anticipate will be much more adequate and will allow for additional expansion and development of our program. The third sponsor is the Billings School District which is concerned with the educational program for the children and provides part of the salaries for the teachers, transportation for the children, the educational materials and supervision of the education program.

There are four primary areas of our program. The school program provides training at three levels. Children may enter our preschool class at the age of 3 years. At age 6 they may be placed in the primary class and older children may be placed in or progress into the intermediate room which includes classes through grade 8. The school provides a flexible, individualized, special education training program for children with a variety of handicapping conditions. Physically, medically, and orthopedically handicapped children, as well as those with multiple handicaps, and children with communication problems may be included in our school program. The children in the school receive the therapies they require including speech therapy, physical therapy, occupational therapy, and play or psychotherapy. The children are placed in regular school programs at the earliest opportunity.

Our clinical program includes a Medical Clinic which meets twice each month, a Cleft Palate Clinic which participates in the statewide program for cleft palate children and is conducted six times per year, a Mental Retardation Evaluation Clinic meeting once each month, and Speech and Hearing Clinics conducted at least once each week.

The fourth area of our program is the training of student teachers in special education, student nurses from our training hospitals, and the training of certain therapists.

Our basic philosophy is the team approach; with communication between the members of the staff and between the members of the team of the various clinics being of utmost importance. Intrastaff communication is on both a formal and informal basis with many discussions taking place at coffee breaks and incidentally throughout the day. Staff conferences, parent conferences, and special small group conferences are called for a formal exchange of information and communication.

Clinic Procedure

The procedure and sequence of a Medical Clinic, which is typical of all our clinics, is structured around team efforts. A child is brought to the Center by his parents and met by the receptionist. While the parents are being interviewed by the public health nurse (who is the coordinator of patient services) and furnishing her with additional medical and social background information, the child may be seen by one of the therapists or the clinical psychologist. The psychologist will make an examination, not only to determine the level of mental function, but also to discover possible adjustment problems and to make a preliminary assessment of the child's personality. The child will be seen by the physical therapist and the occupational therapist and will have a speech and hearing evaluation. He may also be seen by a special education consultant. On "Clinic" day the patient will be seen by a pediatrician and an orthopedic surgeon. Following these examinations the findings of each of the team members is presented and discussed at the staffing session. The team then develops recommendations for training, therapy, or treatment for the patient. Suggestions are presented to the parents who are helped to make arrangements to follow these recommendations if they so desire.

Patients in our speech and hearing clinics are evaluated by the psychologist, the speech pathologist, and the audiologist, and a case history is taken by the public health nurse. Again, the findings are reported and a plan of treatment or therapy is developed and recommended to the parents.

Our Mental Retardation Evaluation Clinics are staffed by a pediatrician, our public health nurse, a psychologist, and a speech and hearing pathologist. A great deal of parent counseling and followup work is done in connection with this clinic.

Our Cleft Palate Team is one of four in the statewide, coordinated program for the care and treatment of children with cleft palate. The four teams in the state are each assigned a geographic area to serve and all the teams are coordinated by one person from the State Department of Health. Our team consists of a maxillofacial surgeon otolaryngologist, a prosthodontist, an orthodontist, a pediatrician, a medical social worker, a public health nurse, a clinical psychologist, a speech pathologist, and an audiologist. Here again the program is characterized by a coordinated team approach. Each member of the team knows what to expect of the other team members and makes adjustments in his program and treatment to give the best overall treatment for the patient.

Referral may be made from any of our clinics for laboratory tests, neurological or other special clinical evaluations as required.

It is anticipated that additional clinics may be developed in such areas as the diagnosis of educational problems and for the neurologically impaired. Plans are under way for the establishment of a program to diagnose the vocational potential of handicapped children, provide basic skill training, and occupational counseling. It is anticipated that the college will soon have a master's degree program for the training of vocational rehabilitation counselors which will fit closely with our program.

Our future is hopeful with the prospect of a new building and an opportunity to better serve the handicapped children of Montana.

ABSTRACT

A CRITERION OF ADMINISTRATIVE PROBLEMS

by

Richard J. Kothera

A criterion of administrative problems in the administration of special education has been developed from a collection of 815 actual problems collected over four one week periods. The data were collected from four distinct administrative areas and include city and unified school districts, a suburban high school district, a suburban elementary cooperation program, and a university demonstration school. Using the percentage of problems contained in the criterion, a list of 100 actual problems of special education administration was developed. This material is recommended for use ancillary to training programs in special education administration in addition to their potential use in simulation of special education administration.

COMMUNICATION DISORDERS

THE EXPECTATIONS OF THE EDUCATOR OF THE DEAF FOR AUDIOLOGICAL AND PSYCHOLOGICAL SERVICES TO THE YOUNG DEAF CHILD

by

Doin E. Hicks

Early severe deafness manifests itself in communication disorders which are among the most serious known. Levine (1960) has characterized succinctly the problems of those faced with this handicap in the following description:

> ....here is found the closest modern equivalent to the linguistic state of preverbal man. To be born without the ability to hear is to be born without the natural ability to acquire verbal language; without verbal language, normal human development is blocked.

The development of a language symbol and a means for its transmittal are basic to man's ability to move freely in a modern society. When the development of a language system is impeded by early deafness or when speech and hearing problems preclude facility in communication, serious educational problems may be anticipated.

A considerable body of knowledge exists regarding the education of the deaf -- some aspects not too well defined, others frought with controversy; nevertheless, there have been accomplishments in which the profession can take pride. Presented with a deaf child of normal ability and without additional handicaps the educator can with some assurance provide a rather promising educational prognosis. The problem is in defining deaf "normality", and, perhaps, deafness itself.

In our traditional approach to quantifying the potential of deaf individuals we use, in the main, instruments which compare the deaf with hearing persons of the same age. This is particularly true in the areas of perceptual skills, personality, and social maturity.

Silverman (1964), in a brilliant keynote address to the *National Workshop on Improved Opportunities for the Deaf*, warned against being beguiled by the deceptive simplicity of the question, "What is Deafness?" He amplified the discussion as follows:

> What really is deafness? Is it a number on a decibel scale that describes the severity of hearing impairment? Is it a disease like mumps or measles or meningitis? Is it a piece of tissue in the auditory system that would be judged to be abnormal is viewed under a microscope? Is it an affliction to be conquered by the ingenious scientist? Is it the burden of a child whose parent hopes persistently and fervently that the scientists wil be successful, and soon? Is it a special mode of communication? Is it something that is encountered occasionally in the man or woman whose fingers fly and whose utterances are arythmic and strident? Is it a cause to which

> diligent, skillful, and patient teachers have committed themselves for generations? Is it the agony of isolation from a piece of the real world? Is it the joy of accomplishment that mocks the handicap? Is it the bright mind and the potentially capable hands for which the economy has no use because they are uncultivated? Is it a crystallization of attitudes of a distinctive group whose deafness, modes of communication, and other associated attributes, such as previous education, that they have in common, cause them to band together to achieve social and economic self realization? Of course, it is all of these and more, depending on who asks the question and why.

If the subject of deafness itself presents a dilemma, what of those children who have physical, mental, or emotional handicaps in addition to deafness or those who seem to hear yet do not develop speech and language as they should? We have several currently fashionable terms to describe the latter child. such as "language delayed" or "perceptually impaired." Though opinions differ, various estimates indicate that the number of children in our schools for the deaf who have handicaps in addition to deafness may be as high as 30 to 40 percent.

In light of the foregoing discussion, is it any wonder that the educator is awed by the tremendous task of prescribing educational procedures and programs for the deaf child?

The educational management of the deaf child is a task of too much importance and complexity for the educator to attempt alone. Many disciplines impinge upon and contribute to educational planing for the deaf child. The two that, perhaps, are of greatest importance -- and certainly basic to sound educational management of the deaf -- are audiology and psychology. Time and space limitations preclude here any attempt to describe all the ways in which these disciplines could or should be utilized maximally by the educators. Among the numerous aspects of interdisciplinary activities, many are important enough to warrant exhaustive treatment; i.e.:

1. Training programs for personnel in each of the areas

2. Services provided deaf clients in speech and hearing centers

3. Services considered routinely necessary in the school setting

4. Attitudes and interprofessional relationships.

A new area in education has emerged, however, that is demanding the attention of all who work with deaf children -- infant education. This area is new only in the sense that it has not heretofore been attempted on a systematic and mass basis. Many clinics for years have attempted diagnosis and beginning habilitation for deaf infants, but such services have reached only a small fraction of the young deaf population. The need and the demands for such services are becoming increasingly well established.

Suggestions for Planning Diagnostic and Habilitation Procedures

What follows are suggestions as to how the educator, the audiologist, and the psychologist might pursue the difficult task of planning diagnostic and habilitation procedures for the young deaf child. Such planning can well begin during the first year of life and certainly should begin during the second year.

It is to be understood that the physician's role is paramount both in providing initial information relative to physical condition of the child and in approval for diagnostic and therapeutic procedures to proceed. The family members of the deaf infant cannot be overlooked, as their contribution to and cooperation with the educational enterprise is most essential to its success.

The educator faces myriad problems in planning for and working with the young deaf child. Educational methodology for the deaf infant is not well defined. Shall we use merely a downward extension of those principles and techniques which have proven valuable with beginning deaf students of 4 to 6 years of age, or shall we seek entirely new approaches for use with the very young? Linguists speculate that young children have a predisposition for learning speech and language, the patterns of which are unlike those we traditionally teach deaf children. Eminent neurologists such as Penfield and Roberts (1959) have pointed out the importance of acquiring language during the first few years of life and have suggested that if language is not learned early, it may never be learned. Myklebust (1964) has stated that early training of deaf persons may offset any adverse effects deafness has on the formation or structure of intellect although the relative effects of heredity and training on mental operations are not known. The prospect that deaf children, through use of amplification and with training in infancy, may learn to use residual hearing to an extent not previously thought possible is intriguing. Ciwa Griffiths (1966) in her recent book even suggests that hearing thresholds may be improved through early training. The uses of various types of amplification such as selected frequency, broad frequency, and transposition of frequencies each have their implications which the educator must attempt to assimilate and use to advantage within the context of a long range educational program.

Rates of expected progress in learning for the young deaf child are not well established. The frequency and duration of formal instructional sessions too are still a matter for conjecture. We inject all hearing children into the same educational mold at age 5 or 6 and expect that they will emerge years later as individuals differing from each other to a far greater extent than upon entry. Surprisingly, it works. It may be, however, that for the deaf infant of one or two years of age, we need a highly individualized program and one in which we don't attempt to normalize educational outcomes. Observation has led this writer to believe that motivation plays a vastly greater role with the young deaf child than many of us are prone to believe, particularly with regard to the use made of impaired sensory channels.

What, then, should be expected of the audiologist and psychologist as we plan for the hearing impaired infant? Certainly we can ask the audiologist to substantiate the presence of a suspected hearing loss and make some quantifications relative to its nature and to amplification that might be appropriate. Likewise, we can expect the psychologist to make some estimate of the child's intellectual functioning and provide some insights into his emotional status, motor abilities, and social maturity. But are we to stop here in our use of the abilities and talents of these highly trained professionals? Most of us do.

Special Considerations in Planning Programs for the Young Deaf Child

As this discussion basically concerns service to deaf persons during the first few years of life, some special considerations are in order. The audiologist is ordinarily the first person to whom an infant is referred after being suspected of having a hearing deficit. This referral, of course, should come from or be cleared by the family otologist. This places great responsibility on the audiologist as the intial contact with the hearing impaired infant and his anxious parents. Indeed, the handling of the child in the test situation and the parents in the interview counseling sessions can have a great bearing on the work of those to follow. It is highly desirable that the audiologist who deals with hearing impaired infants and their families have some special background for doing so. No attempt is made here to prescribe training procedures for audiologists. It is, however, gratifying to educators attempting to work with the very young deaf child to see recognition being given to specialists in pediatric audiology. Also encouraging is the development of programs for newborn infant testing and the maintenance of high risk registries relative to hearing impaired infants.

Few educational programs are geared to accept deaf children younger than age two to two and one-half. Most of the assistance given children and their parents prior to that time falls the lot of the audiologist. These activities may include:

1. Initiating a series of testing sessions with the child, aimed at quantification of information relative to the deficit

2. Providing loaner amplification on trial bases, with specific permanent amplification being suggested when it appears warranted

3. Assisting the parents with plans to provide a home environment conducive to the child's making good use of amplification

4. Assisting the parents in establishing some expectations for the child

5. Referring the child and/or parents to psychologist, social worker, educator and other professionals. However, the audiologist should continue to work with these other disciplines as a team member, especially in the area of auditory training and specifically in sequencing exposure to sound so that it is consistent with what is known about prelanguage development.

During the first two to three years of the hearing impaired infant's life, the psychologically oriented professional probably can be of greatest assistance in the area of parent counseling. Certainly some formal testing may be attempted and much additional information can be gained by observing the child in a variety of situations, but it is during this period also that parents usually need assistance most. The clinical psychologist or psychiatric social worker is best equippped to guide the parents in dealing with their feelings — usually strong feelings of guilt, anger or fear that color the views they hold of themselves and of their child.

The above is not meant to imply that the speech and hearing clinician cannot or should not do parent counseling. Most such clinicians perform this function and do so creditably. It is desirable, however, to have support and assistant from the counseling specialist. The clinician must appraise each case and make the determination as to when his requisite skills might be insufficient to attempt the modification in patterns of adjustment which seems needed.

When children with hearing impairments have had appropriate amplification and auditory stimulation from infancy, and when their parents have learned to deal realistically with their feelings about themselves and their child, the task faced by the educator is made easier. The process of educating both parents and child can then proceed without interruption.

Let us explore now the desirability of the educator becoming involved while the child is undergoing diagnostic procedures and while the parents are first attempting to come to grips with the responsibility of rearing a hearing impaired child. Why not place the child in group diagnostic therapy upon first suspicion of a communications deficit? Such a group might be comprised of six to ten children ages one to three meeting twice weekly for two to three hours. The therapists for such a group would ideally be a teacher of the deaf and a speech pathologist. The therapy would be diagnostic in nature, aimed at determining general abilities, observing auditory behavior, and conditioning children so that they would respond accurately in the formal testing situation. The audiologist and psychologist should be frequent observers of such sessions. Parent training and counseling should be carried out concurrently with the therapy sessions.

By the end of a specified time, perhaps two to three months, each child would have been seen individually and as frequently as necessary both by the audiologist and by the psychologist. A staffing of each child at this time to review findings would reveal progress toward diagnosis and provide program direction. Some children might need to repeat the diagnostic therapy process; others might be recommended for immediate enrollment in a school for the deaf and still others might be recommended for additional therapy of a different nature, such as psychotherapy or language and speech stimulation. Such a program as described could be carried out in any urban hearing and speech clinic within realistic financial and staff requirements.

The cost of educating a deaf child is staggering -- from two to five thousand dollars a year depending on location and type of facility (whether day or residential). If we are to spend such sums on a child's education -- not to mention the highly skilled manpower required -- then surely such an investment should be solidly based in the blue chip stock of early, accurate diagnosis and training.

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STUTTERING THERAPY: QUESTIONS AND ANSWERS

by

Frank J. Falck

Can Stuttering Be Cured?

There is no need to think in terms of curing stuttering. Stuttering is behavior; it is something a person does. You do not try to cure behavior; you change it. If a person does certain things which interfere with the normal speech processes, he is stuttering. If he does not do these things, he is not stuttering. The goal in a therapy program is to change, modify, or eliminate the behavior we call stuttering.

It must be remembered however that stuttering includes a great variety of behavior, all of which must be changed. This means that the mental as well as the physical or mechanical aspects of the speech disrupting movements must be altered. The mental aspects include the person's fears and anxieties about speech, his doubts about himself as a speaker and as a person, and his attitudes concerning his relationship with other persons.

The word "cure" is not avoided for any reason other than that it is misleading. Actually, the majority of stutterers are, or have been, seeking a cure. This seeking is part of the confusion surrounding this whole problem. The person seeking a cure still has not accepted responsibility for the behavior he exhibits; to him, it still is the mystical something that happens to him. He has not yet been able to realize or accept his role in the perpetuation of this frustrating behavior.

The next logical question, now that the word and concept of cure has been attended to, is: can stuttering be eliminated? The answer is yes, however this answer has to be qualified. If the question is really asking whether some persons can have their habits changed to the degree that speaking is no longer a feared situation, and speech is produced within the normal limits of fluency, the answer is yes. If the question is asking whether all stutterers can reach that point, the answer must be theoretically yes, practically no. That is to say that, from a theoretical point of view, there is no reason which would necessarily prevent any stutterer from losing membership in the stuttering fraternity -- the laws of learning apply to all. From a practical point of view, it must be recognized that for some stutterers the habit patterns will be so strong and so generalized that complete elimination of all aspects of the stuttering problem may be less likely. Even in these cases a logical goal (and one well worth working toward) is speech which is fluent enough so as to not interfere in any way with conversational attempts. This goal can be reached by all.

When the habit aspects of stuttering are considered alone,it is obvious that the earlier therapy is started the more success should be expected. When the psychological or emotional aspects of stuttering are considered,the same conclusion is apparent. If therapy, directed at the removal of the stutterer's confusion about his speech and himself, is started early enough, the habit strength involved is not so formidable an obstacle. If therapy is not started early enough, the proportions assumed by the habit strength (even considered purely from a mechanical point of view) are fantastic when compared with any other behavior which an individual learns.

Let us consider the situation involved (again from a purely mechanical point of view) -- an admittedly impossible and impractical approach clinically -- when we examine the strength of the stuttering habit in an adult who has stuttered for 20 years or more. In that amount of time it is quite likely that he has stuttered a million times or more. This is a great deal of practice to put into the learning of something. No wonder the habit is strongly entrenched. The stutterer has worked hard to develop the dubious distinction of being an accomplished stutterer. It is doubtful whether many of our finest musicians have put that much work into learning to be accomplished musicians. They surely have not all thrown themselves into the learning process with as much emotion as is involved each time the stutterer "blocks." Each successful playing of the correct sound in response to the cue of the written musical note is not rewarded as strongly as is the successful completion of a stuttered word or phrase. The musician practices many hours by himself before performing in public. The stutterer "performs" every time he has to communicate verbally, and each performance is an emotionally loaded one.

The statement that stuttering can be eliminated is an important part of the dynamics of a therapy program. When the stutterer sees how his frustrating behavior is of his own doing, how it was learned, and how it can be unlearned this newly defined "cure" becomes a realistic goal worth working toward.

What Are the Steps in a Therapy Program?

In the same way that the development of a stuttering habit follows a logical sequence, the unlearning process also proceeds through a step by step series of events. To be successful, the elimination of stuttering behavior has to include the following:

1. Removal of the basic confusion regarding stuttering behavior

2. Breakdown of the learned stuttering patterns which are confusion directed, panic motivated, and interfere with normal speech

3. Reinforcement of the learned (stimulus response, signal action) patterns of normal speech, including the development of a tolerance for "normal" speech nonfluency

4. Minimization of primary causes of excessive basic nonfluence, psychological or neurological

5. Reintegration of the personality to permit a "normal speaker" self image.

Naturally, the amount of emphasis at each one of these steps will vary according to the person's age and the degree and type of involvement. Sometimes it may be difficult to identify each step as a separate entity as there appears to be a merging together so that the basic sequence is obscured. However, in any case where a child or an adult has successfully and completely unlearned stuttering and is again a normal speaker, these factors have been appropriately accounted for in one way or another.

The first and most important step, which has been ignored too often in the past and is being ignored too often in the present operant conditioning vogue, involves the removal of the basic confusion which exists in the mind and behavior of the person who has learned to stutter.

As stated previously, stuttering is learned behavior. It is about as strong a habit as a person can develop. However, like any learned behavior, those things that a person does which are the stuttering, those things which need to be changed, can be changed. The stutterer must understand and accept this or the chances that therapy is going to be successful will be very slim. Acceptance must be based on genuine understanding of the processes by which stuttering was learned and the processes by which it can be unlearned and replaced with more appropriate, socially and personally acceptable patterns of speech. It is not enough for the acceptance to based on the authority of the therapist.

The stutterer must understand what his role was in the process which led to the development of the confusion directed, panic motivated behavior he fears and dislikes. He must also understand the role he has to take in the process of changing this behavior. Only then can confusion be eliminated and the way cleared for the next therapy step.

This second step involves the breaking down of the learned stuttering patterns which interfere with normal speech. Stuttering behavior consists of certain mental and physical responses to specific signal stimuli. These responses occur automatically and habitually because they have been rewarded or reinforced to the degree that they are the most likely reactions to occur in response to these signals.

In order for these responses to be changed, it is first necessary that they be identified. The complex behavioral pattern of stuttering must be analyzed into its many mental and physical components. The stimuli which act as signals must also be identified as completely as possible. Then the more appropriate actions, those resulting in normal speech patterns, must be identified so they can be substituted for the unwanted ones which are the stuttering.

Normal speech patterns have to be reinforced through repetition and the subsequent reward that accompanies fluency. Normal speech patterns have to gain the dominant position in the hierarchy of possible responses to stimuli such as previously feared words, or sounds, or situations. This normal speech has to ultimately include certain amounts of nonfluency which the speaker learned to tolerate and to which he must not overreact.

Any causes of excessive degrees and amounts of nonfluency must be minimized as a separate and important step to make easier the task of reverting to a speech pattern acceptable by speaker and listener alike. These causes may be basically psychological, basically neurological, or a combination of both. Appropriate therapy might include language skill development, stress situation desensitization, counseling or psychotherapy, and even general physical coordination training.

The last therapy step can involve a fairly extensive amount of effort or it may must seem to come about automatically with progress through the first four. This involves the adoption by the person of a self image as a normal speaker. When this is accomplished, therapy as a systematic process of behavioral modification and change can be considered to be completed.

What Specific Therapy Techniques Have Been Found To Be Most Useful and Effective?

The most useful overall technique is the essential one involving the removal of confusion from the person as to what stuttering is, why he stutters, and what can be done about it.

The basic approach used involves comparing stuttering to other kinds of learned behavior to demonstrate that it is not a mysterious something that happens but rather that it is composed of a series of things that the stutterer does. A meaningful and actually very appropriate analogy is used in initial sessions which helps throughout therapy as reference to it can be made whenever it seems appropriate. The analogy involves a description of a board or plank a foot wide and a dozen feet long. While the plank rests on the ground one could understandably walk its length with no trouble as a fluent walker. But walking the length of the plank when it stretches between two 30 story buildings would not result in the same degree of walking fluency. The plank would be the same, the person would be the same, but the overall effect would be quite different. The stutterer can easily understand this and can generalize to speaking situations where he walks the plank, so to speak, hundreds of times each day.

Analysis of the stuttering behavior itself is useful. Detailed comparisons between what is done when stuttering occurs during the saying of a phrase and how that same phrase is produced during a sample of normal speech are made. This is done systematically. For example, the first step in saying the word "stuttering" normally involves placement of tongue in relationship to teeth in such a way that the next step of delivering an unvoiced air stream past them results in the s sound. The tongue then is raised to momentarily interfere with the air stream. This begins the t sound which is completed as the tongue tip is quickly dropped producing the necessary plosiveness. As the tongue begins its descent, voice is produced. This results in the necessary ə sound. The rest of the word can be analyzed in the same way.

If a person blocks on this word,it is quite likely that he deviates from the normal sequence in not producing the voice on time following the t. If this is the case, this deviation from the sequence of necessary actions for the production of normal speech can be demonstrated and the person can determine for himself what he is doing wrong. This helps give him a chance to reduce the problem to a size he can reasonably expect himself to handle. He is not battling "stuttering" -- a seemingly overwhelming task -- he is working on getting himself to produce the correct bit of behavior in the sequence of behavioral actions with which he produces speech and thereby communicates.

Imitation of the blocks to bring them to a conscious, understood level is quite useful. If the person can successfully make himself block, he has discovered what actions he is taking which lead to the speech interruption and it gives him a direction for further deconditioning activities.

Negative practice is somewhat similar and also useful. Having him repeat his blocks again helps break the pattern if he understands what he is doing. It is generally suggested that the block be interrupted rather than completed all the way through so as to break the stimulus response reward cycle as much as possible.

Voicing entire phrases as one continuous sound train has been very useful. The person is reminded that while a phrase like, "I went to the movie yesterday," is written as six separate words it is usually spoken in one unhurried, voiced, breath stream with little if any complete disruption of voicing, even at the so called unvoiced sounds. Choral speaking helps to get the person into this technique if he has difficulty controlling his own efforts.

Slow, deliberate speech is encouraged during early practice efforts. Slowness for the sake of slowness is not the desired effect; the person is encouraged to articulate slowly enough to allow the correct bits of behavior to be carried out that are necessary for the ultimate production of speech which is as near normal as possible. In keeping with the idea of getting rid of some of the mysteriousness generally associated with stuttering, the person is reminded of the similar types of slow deliberate actions necessary to assure a lack of errors in early typing or piano playing learning activities. This helps encourage the needed patient during the unlearning and relearning process and tends to minimize the "normal" desire to want immediate results, especially when stuttering is explained as understandable behavior. The piano playing example also helps when the person is reminded that knowing the names of each keyboard note does not make a pianist. A large amount of practice must follow "insight" to make the behavior automatic.

Considerable success has been achieved with some stutterers using a desensitization process that employs imagination in place of actual situation participation. The person, after having learned what he is actually doing that interferes with normal speech, reproduces situations, tensions, and conflicting thoughts in his imagination and then, using appropriately paced deliberateness, works his way through the block. This is done with simple blocks and simple situations first and then he is worked up further on the scale of difficulty of feared situations.

Other specific techniques are of possible use in the unlearning process. Many of the therapy suggestions that fill the literature can have value as long as they are applied within the framework of proper learning principles and are used with a person who understands their purpose in the overall therapy plan.

ABSTRACT

THE EMPLOYMENT ENVIRONMENT

by

Stanley Ainsworth

There are many ways in which the employment environment influences the effectiveness of speech therapy. Some of these are fairly obvious, for example, the size and attractiveness of the physical facility, the availability of equipment and materials, and the availability of outside resources have all been mentioned. Less frequently mentioned is the availability of resource personnel and the extent to which the functioning clinician utilizes these individuals. Although each type of employment environment offers unique opportunities for the clinician employed there, the clinician must often take the initiative to make certain that the advantages found in the environment are fully utilized. For example, the hospital environment offers rich medical resources and extensive medical information plus the cooperative effort of the other paramedical personnel to be found there. The university environment offers rich resources in terms of the availability for consultant help, particularly in the field of speech pathology and audiology, but also in such areas as psychology, social work, linguistics, deaf education, mental retardation, etc. The public school environment offers perhaps less in the way of medical information and consultation but does offer a great deal of information relating to intellectual functioning and family background. Most important, the clinician has the child available throughout the day if she is able to procure the cooperation of the classroom teacher.

The success of the speech and hearing program is related at least in part, and perhaps in large measure, to the extent to which the clinician is able to make full use of the particular employment environment in which he or she finds himself and the extent to which those advantages missing from other environments are minimized.

THE DEAF CHILD'S KNOWLEDGE OF WORDS

by

Toby R. Silverman

In August of 1967 a project was begun on the reading vocabulary of the deaf child, which will run through August of 1970. While there are many factors related to reading, this study deals with only one such factor--the vocabulary the deaf child brings with him to this task.

The major source of information for the deaf child is in the form of printed material, such as texts, trade books, children's magazines, and children's newspapers. Consequently, skill in reading is far more crucial for him than for the hearing child, whose information comes from a much wider variety of sources--auditory as well as printed.

No teacher of the deaf needs to be told that the majority of her charges are poor readers--she lives with this fact. There are many reasons why. In the current study we have started with the observation that the deaf child is far below his hearing peer in reading comprehension (Furth, 1966). Reading comprehension, in turn, is related to vocabulary knowledge (Seashore and Eckerson, 1940). We have, at present, little systematic information on the reading vocabulary of the deaf child. Such information would be of value to educators of the deaf, who struggle each year to find, modify, or create reading materials for their classes.

Most standard educational materials cannot be used as is. Such materials are presumably constructed in conformance with graded vocabulary levels, i.e., a second grade text is written in a vocabulary that second graders are presumed to know. Such vocabulary levels are obtained from three major sources: The Dale-Chall List of 3,000 Familiar Words (Dale and Chall, 1948), the Dale-Eichholz Lists (Dale and Eichholz, 1960), and the Thorndike-Lorge Word Count (Thorndike and Lorge, 1938).

In the Dale-Chall List, the authors presented lists of words to a sample of fourth grade children who were asked to check off the words which they "knew." Vocabulary tests were then constructed from a pool of these words and subsequently given to children at various grade levels. The level of each word was then defined to be the grade at which 67 percent of its members chose the correct definition. A more comprehensive list of over 17,000 words was later compiled by Dale and Eichholz (1960). In the case of the Thorndike-Lorge Word Count, vocabularly level is presumed to be related to the frequency of occurrence of words in various types of printed material.

Educators of the deaf who use such standard educational reading materials have found it necessary to simplify the vocabulary of these texts, since the materials in question have been constructed for use by hearing children, and they are inappropriate for use, without extensive modification, with deaf children. Thus, a teacher whose major concern should be content is forced to evaluate the vocabulary of the texts she wishes to use. If she wishes to teach a fourth grade history unit on the founding of our country, she must rewrite a large portion of the text and teach a number of new words. Such terms as "political suppression," "taxation without representation," etc., must be explained to the deaf child using much more simplified vocabulary. The task of continually editing material of this type is, at the very least, bothersome. A more efficient solution would be to construct reading materials in conformance with the graded vocabulary levels of deaf children. It must be discovered what vocabulary level can be reasonably expected of the eight year old deaf child, the eleven year old deaf child, etc. If there is made available a pool of known words at such age levels, texts can be written where the focus is on content and where a minimum of rewriting is required.

The objective, then, is to reorganize the bulk of the Dale-Chall and Dale-Eichholz vocabulary lists in order to arrive at a set of age graded vocabulary lists reflecting the actual vocabulary of the deaf child at various ages.

We have started constructing vocabulary lists from a word pool of some 15,000 words on these lists. Obviously, no child can be asked to respond to every word. Instead, each child will respond to 200 words, which will be randomly selected from the larger word pool. Each of these 200 word lists is constructed in the manner of a standard vocabulary test, such as is normally given in the achievement testing at the end of each school year. The instructions are printed on the test itself as well as on practice items, so that no extensive instructions are required.

To obtain a large number of responses to each word by children at all ages from eight through 17, large numbers of children are required. Last spring, each of the 104 schools for the deaf in the United States were contacted for cooperation in this study. The response has been overwhelming. At last count, only four schools have refused to participate. There should be, therefore, a large enough sample with which to work. All children between eight and 17 years of age will be included, regardless of the dB loss or presence of secondary disabilities, because our results should reflect what deaf children in schools for the deaf know. This is the population to be serviced, not just "typically deaf" children.

At the end of a three year time period, a compendium of words known by deaf children will be published and made available to educators of the deaf. Prematurely, a word of caution should be issued. This is a large scale study and as in all such projects its utility is relative to individual situations. No teacher will be able to pick up the compendium and say, "I have eight year olds; therefore I'll prepare my materials from this list and my children's reading problems will be over." Many will cringe and wonder why their charges don't know half the words on their age list. Others will boast that their children's vocabulary skills are far beyond those of the norm. Still others will feel that, since deaf children live in the hearing world, we should teach to the norms of the hearing world. Each is a legitimate observation.

Given the most extensive vocabulary, there are still other crucial reasons why reading may be impaired. The child may have inadequate linguistic skills, i.e., his performance with various linguistic rules may be faulty.

This is quite an important matter, and for a fuller explanation the reader might wish to consult the work of such modern linguists as Noam Chomsky (Aspects of the Theory of Syntax and Syntactic Structures); George A. Miller and Frank Smith (The Genesis of Language); and U. Bellugi and R. Brown (The Acquisition of Language, Child Development Monograph, 1964).

The child may lack the conceptual background or experience necessary for understanding certain kinds of printed materials. His perception may be faulty. His memory may be impaired. The list is almost inexhaustible. Neither an individual child nor an individual school should be pitted against the norms. The lists are only descriptions of what the average deaf child of a given age knows. School, regional, and individual differences still exist. Even more important, the lists should not become a goal. Much useful time can be wasted on the relatively meaningless activity of vocabulary building. Words are part of activities. The question of whether an eight year old deaf child "should" know the words on the eight year old list is not a subject under investigation. The teacher must ultimately decide what to teach. The list can provide hints on words which may be used to define other words.

For us in the Research Department the lists should prove extremely useful. In devising many of our tests we, too, must know if certain words are within the vocabulary of the children we test; the lists will give a better estimate.

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ABSTRACT

THE SPEECH CLINICIAN: HIS PERSONAL QUALIFICATIONS

by

Phyllis Gildston and Harold Gildston

For the price of some distortion of the whole, it is possible to fractionate the "clinician" and study the pieces. Academic training, clinical practicum, and on the job experience hone and polish the already educated mind,

enabling it to deal effectively in communication problems. But at the center, supporting and uniting the many parts, vibrates a nonprofessional core, the ego, which joins meaningfully, although indirectly, in the therapeutic process. Physical appearance, dress, age, sex, social class, and that tenuous totality of minutae called "personality" also have a hand in shaping therapy--particularly from the point of view of patient responses--and thus contribute, ultimately, to success or failure. The values and biases of the clinician determine not only his personal attitudes toward patients but are usually instrumental in the selection of therapeutic techniques and materials. Hence the clinician's personal qualifications function, at least in part, as unknowns in any prognostic equation.

PANEL: COMMUNICATION DISORDERS: A LONGITUDINAL STUDY:

SCENE IV: PRIMARY YEARS

by

Vilma T. Falck

Scene IV in the series, entitled Communication Disorders, A Longitudinal Study, followed sessions which had already considered Douglas (a child with disorders of speech, hearing, language and learning) during the pre-, peri-, and postnatal period as well as during the preschool years of growth and development. The fourth session considered Douglas at the level of the primary grades.

In order to make the program as meaningful as possible, it was decided to pick one particular subject--Attention. Basic to the problems demonstrated by a child with disorders of communication may be faulty attention. It cannot be assumed that information made available to the child will automatically be recorded in the central nervous system. In order to remember, to discriminate, to code, to sequence, to categorize, to build up associations--it is necessary first of all to be able to attend to appropriate stimuli.

Attention in the newborn is, to a large degree, reflexive in nature. Selective attention is a process of gradual inhibition (or gaining control) of these automatic responses to the degree that ultimately the intensity of the stimuli is not the criterion upon which selection is based. Instead, selection results from a developed ability to filter out irrelevant signals and focus on the ones appropriate to the time, place, and situation.

Some children need more help than others inhibiting what we consider to be the extraneous stimuli at any given point in time or space. They need help in marshaling their filtering and selection processes. They need help in being able to initiate and to continue this selective perception. They can be helped to develop these skills.

Certain techniques found to be useful in this overall process of developing and inproving the ability to selectively and appropriate attend were presented by a panel representing four fairly typical environments in which Douglas might be found:

1. In a regular class of 30 children where one or two Douglases might be found by chance selection alone

2. In a class in a special school where there might be a liberal sprinkling of Douglas like children

3. In individual tutoring

4. In a clinical classroom of selected children where all might be like him.

Regular Classroom

Representing a program in a regular classroom, Dorothy Melville, of the Burlington Public Schools, described individualized instruction in a heterogeneous first grade at the Smith School, Burlington, Vermont. Her program originally began as a Federal Project in Individualized Reading but presently encompases individualizing instruction in other areas.

It is felt that this program is successful because the child does not have to compete with the group. The program is self pacing. Each child proceeds at his own rate and his own ability level. In addition, the program is tailored to the individual needs of each child. Through individual conferences with the children, the teacher becomes well acquainted with the needs of each child and how he learns best. She then capitalizes on her knowledge for further individual instruction.

The program allows each child to select his own reading materials. Self selection allows him to enjoy reading books that interest him which in turn motivates and helps build self image. The atmosphere is one of child discovery, offering freedom to move, a variety of experiences, and plenty of time to think and discover.

Provision is made for an intensive phonic program for those students who benefit from such instruction. Some children learn to read in ways unrelated to formal instruction, therefore other activities are included. Community experiences, trips or guest speakers, or the children's use of a variety of special equipment, e.g., recording on tapes, preparing original transparencies for the overhead projector, operating the filmstrip projector either in small groups or individually, or the use of carrels for individual work and concentration provide much variety from which specific solutions for the problems of special children can be found.

Structured activities of sixth graders with first grade children for half hour sessions each day (storytelling, dramatizations, dictation of original stories, or just talking with them) are an integral part of the program.

In this regular classroom environment, it is possible to summarize the whole learning experience of each child by saying it is total involvement in some form of learning activity at the child's own level each day.

Classroom In A Special School

Pauline Bosworth, also of the Burlington Public Schools, described a special project being conducted in the Lawrence Barnes School in Burlington, Vermont. The project is trying to meet the needs of 80 Primary children with a concentrated program in an ungraded situation. Thirty of the children were first graders last year who had not succeeded at all in reading. The remaining fifty children were last year's kindergarteners whose performance was predictive of failure in a regular first grade. Evaluations made by the Gesell Measurement of School Readiness indicated four and one-half, five, and five and one-half year levels of maturity. Lawrence Barnes was described as an inner city school with the usual slum cultural patterns and problems. Thirty-five of the children had birthdates later than September 1, so that simple chronological age is also not in their favor.

This program is trying to counteract adverse influences in these ways:

1. Small classes with not more than 15 children
2. Availability of good food (a well balanced meal served to every child every day)
3. Perception training as readiness for learning stressed
4. Field trips, many concrete experiences, much exposure to good stories and music, many opportunities for speech and discussion provided each day (since oral language development is seen as a strong deficit with most of the children)
5. Daily speech therapy sessions held for those who need them.

Four Teacher Aides from the New Careers Program are included in the staff. They share in play area and bus supervision, serve lunch, prepare audiovisual materials and art projects, and have, in a few cases, even given baths. Their role in interpreting the program to parents is being explored. They are recruited from the poverty group; some of their homes are in or near the district served.

Mrs. Bosworth explained that at this point it would be premature to predict the ultimate outcome of the project. While gains in skills, in self image, and in content material are readily seen, having to face the definitely limited capacity of many of the children is a problem. Another complication is that parents are unhappy over the arrangements--the children are bussed away from the regular building to a church educational wing, separated some distance from the neighborhood. Parents are distrustful of the slowed down presentation of academic matter and think of the perception training, field trips and audiovisual aids as play experiences. Badly needed staff planning time is being used to develop better public relations.

Individual Tutoring

Madeline Miles of the Center for Disorders of Communication, University of Vermont, described a tutor training program as one way to help meet the special education needs of children who live far from therapeutic and special educational services or where the number of special teachers is not great enough to keep pace with the demand for that service. At this time, turning to supportive aides or tutors might be most appropriate.

Who are the tutors? They might be parents, they might be teachers, or they might be just mature, warm hearted neighbors with lots of common sense and a little time to devote to this service. These persons come to the Center for Disorders of Communication in Burlington, Vermont for training and guidance.

The goal with tutors is not formal teacher preparation. The Center does not feel it is developing highly skilled therapists with sound theoretical background to transfer from case to case. The goal is to give to each tutor some methods or specific techniques that are applicable to a particular child with whom she is working. The tutor is given the opportunity to observe a series of lessons and then is given specific and rather detailed lesson plans which put into writing the techniques she has seen demonstrated. Following the lesson, plans are discussed, and then a brief demonstration by the tutor for the therapist takes place so that any last minute confusion can be clarified. The tutor then returns to the home community with the child and is on her own for a brief period. In most cases this is initially about a week and then both tne tutor and the child return for continued instruction and further lesson plans. Gradually the space between visits is lengthened as the tutor becomes more familiar with some of the required techniques and the general teaching approach. No tutor is left completely on her own until it is felt that she can cope adequately with the situation between rather widely spaced recheck dates.

The Center for Disorders of Communication in Burlington has been working with this tutor training program formally for the past two years and informally with parents prior to that time. The results have, in the majority of cases, been gratifying. Children for whom no other source of help was available have been receiving and profiting from this type of tutor training program.

Clinical Class

A clinical class for children at the Center for Disorders of Communication in Burlington, Vermont, located in a University Hospital complex, was described by Elizabeth Holloway, of the Center. This class, part of a total program for children with communication disorders, consists of a primary level group of children referred from many different sources.

The class is a small homogeneous group with a maximum of ten children which meets five hours a day, five days a week. The children all have normal intellectual potential but have a variety of communication disorders of speech, hearing, language, or learning. Some of them have come from lower level kindergarten classes from within the Center, others from public kindergarten or some have failed first grade in the regular schools.

The parents of the children selected for this class have a great responsibility to work with the staff in many different areas. Home assignments are incorporated into lessons, and work is planned so that new behavioral patterns learned in school can be carried over into the home. This requires cooperation and participation from the parents. In addition, since the Center is not a neighborhood school, parents are responsible for a great deal of transportation.

A therapeutic approach which emphasizes the importance of attention and specifically planned activities to help the children develop their ability to attend to appropriate stimuli forms the background for this class. At all times the teacher must control the structured environment with carefully planned activities, materials, and time. Integrated techniques from speech therapy, remedial reading, education of the deaf, and other disciplines are programed to help the children compensate for their very specific language disabilities.

Extensive diagnostic and supplementary services are readily available for the children in this class and are routinely utilized. These services allow continuing communication and encourage pooling of suggestions to help each child. Although each child has his own special problem and is treated accordingly, the children have in common the capacity to learn in a small structured language learning situation that can be provided by this clinical class.

Discussion

To provide a commonality of terminology and thinking about Douglas, a film (PACE: Programing Appropriate Communication Experiences), produced at the Center for Disorders of Communication in Burlington, was presented. The film essentially described and demonstrated the structure and function of a primary level clinical class for children with communication disorders. Emphasis on attention through the use and control of environment, materials, and activities, illustrated in the film, led to a panel discussion of attention as a goal for learning. Each of the panel members discussed how the demonstrated techniques could be used in their situations as well as other techniques more applicable to their environments.

It was conceded that the problem of gaining and maintaining attention was more complex than what might be considered necessary for setting up conditioned responses to appropriate or attention getting signals. For years, teachers have known about the value of a bell, a light, piano chords, or clickers. The use of familiar signals as the initial part of a stimulation (e.g., calling a child by name prior to delivering a verbal message or the use of key phrases such as "Now Hear This" prior to making announcements) is a technique to get attention. The problem is how to develop and maintain appropriate attention in order to make sure that learning experiences will be more successful.

Structural and Environmental Techniques to help maintain and develop attention were suggested as follows:

1. Standing nearby or sitting with a child
2. Putting a hand under the chin or on the head to get a child to look at you
3. Providing materials with which the child can cope (e.g., half sheets of paper, less typed copy so there is less stimuli per page, fewer word cards at a time, half assignments)
4. Using novel stimuli to increase attention (e.g., varying oral presentation by whispering, using lip reading clues or using amplification, regardless of the status of peripheral hearing)
5. Limiting the time available for work; establishing short working periods appropriate to and coordinated with the length of the task
6. Alerting children to the activities of the day so they have a sequence of visual reminders, which can be crossed off as work is, or should be, completed, so that they can learn to monitor their schedule
7. Using carrels to limit environment
8. Giving an individual child a physical break from the classroom environment when he needs to get away (under control of the thoughtful teacher in collusion with the child so this does not become a problem. This might be

combined with a trip to a separate room where Bobo, a sand filled clown, would accept aggressiveness)

9. Building into every class day frequent opportunities to change positions, (e.g., requiring purposeful movements by interspersing a brief period of physical exercises, such as two deep knee bends, for all children as they stand beside their desks. This can be done on signal, possibly four to six times a day. All children in this way are given a mechanism for release of the buildup of electrical energy)

10. Pacing physical movements between work activities so that required attention to tasks is effectively broken into small units during which concentrated seat work can be demanded.

Ideas relevant to the use of language were also discussed:

1. Giving simple, slowly paced directions and timing responses in such a way as to consider translation difficulties a child might have, since a child might need thinking time before being able to carry out action

2. Repeating instructions for reinforcement

3. Requiring the child to paraphrase, or even repeat the needed steps, before expecting him to carry out required action

4. Standardizing instructions so that the child can more readily predict with success what will be required

5. Organizing the day so the child always knows what to do, allowing the child to become totally aware of the day's program.(Since children forget what to expect, they need to be constantly reminded that, for instance, "In two minutes we will do something else." As mentioned, putting an outline of activities or visual clues on the board should help)

6. Implementing the systematic use of multiple commands in daily work. (It was felt that, by kindergarten level, most children could follow up to five commands)

7. Requiring delayed responses by teaching a word and lengthening the amount of time required before the word is returned

8. Giving each of several children a separate word and requesting the children to place themselves appropriately to develop a phrase or sentence. (This activity could be preceded by giving each child a number to demonstrate more easily the idea of arranging themselves in sequential order)

9. Utilizing games of directions and descriptions. ("I went on a picnic and took ____ ____ ____," e.g., all [b] words; a bag, beans, ballon, bathrobe, bathing suit, boat)

10. Retelling stories and describing sequences from visual clues (e.g., verbal accompaniment to the Julie and Jack stories, developed originally as material for Deaf Education by Sister Mary Walter, St. Johns School for the Deaf, Milwaukee, Wisconsin. All participants supported liberal but legal appropriation of teaching materials from all areas of special education for use in any environment by any teacher. Interchange of materials between various disciplines is an obvious method of curriculum enrichment)

11. Listening to tape recordings which require comprehension and subsequent action which must always be checked for accuracy by the teacher

12. Developing new uses for old games (e.g., teacher writes a sentence on the board which is hidden from sight. First child is given sentence verbally and it is passed from child to child with the end result compared with original on board. Variations to make the task more difficult would be to use sequences of numbers, and delay and control the time before sentence is transferred to the next child. For instance, the child must do three deep knee bends in between or he must wait until a bell rings to transfer sentence).

Specific suggestions pertinent to the use of visual or auditory stimulation to help develop attention were presented as follows:

1. Encouraging the child to pay attention to missing details (e.g., what part is missing in a picture, what item is missing from a tray of objects)

2. Employing a modified tic tac toe pattern in which a different geometric design is used to be copied by the child in the appropriate place following a brief visual exposure. (Elaboration is possible through variation of design, time of exposure and spatial orientation of each figure, i.e., triangle facing left, triangle facing right, etc.)

3. Developing attention to a pattern of stimuli, then noting which part has been changed; also requiring a verbal description of the change can be encouraged

4. Modulating rhythm and intensity in hand clapping patterns which one child initiates and others follow

5. Requiring child to attend to one out of three children who talk simultaneously

6. Timing motor response to oral commands (e.g., "Put your hands on your head, shoulders, knees, toes, knees, shoulders, etc.").

The participants agreed that at the present time, regardless of a preferred method of helping Douglas which would be based on placement in a clinical or special classroom and/or providing individual help, he is most likely to be found in a regular primary grade classroom. They summarized by suggesting that the teacher support a child in such a setting by:

1. Demonstrating an awareness of his successes (e.g., rewarding his efforts by a trip to the principal's office or to another class, sending commendation home to his parents noting his successful efforts)

2. Giving appropriate responsibilities which will require participation but at which he can succeed

3. Setting realistic goals which are previously discussed with him

4. Pacing an individualized program for him so he can experience success

5. Assigning children in the classroom to help each other. (Both children will benefit and the technique is useful for peer levels as well as by pairing, e.g., sixth grade and first grade levels).

A COMPARATIVE STUDY OF THE TRADITIONAL AND MODALITY TREATMENT APPROACHES TO ARTICULATION THERAPY

by

Anne Welch Carroll

One ongoing concern in our profession has been the enigma of articulation treatment. A recent study by the Council of Speech and Hearing Consultants in state departments of education in 43 states showed that articulation problems still make up eighty percent of the case load of the 7,300 public school speech clinicians surveyed (Carroll, 1967).

Recently we have begun to see studies concerning the effectiveness of articulation therapy. For years we assumed we were doing a good job, but little was done truly to measure this. Studies have begun to shed some light on the subject and the importance of the stimulability variable in predicting articulation improvement for subjects from advanced grade levels. Some studies over the past years have attempted to determine the efficacy of speech therapy for elementary age children with articulation disorders. Spriesterbach and Curtis in 1951 described the heterogeneous nature of articulation disorders which McDonald (1964) cited as a source of error in research dealing with such problems.

An analysis of existing procedures in treating articulation disorders has led this author to take a close look at the process of treatment and to attempt to relate this logically to the developmental process within the child.

Until very recently, treatment programs for articulation disorders have neglected the child's individual approach to learning. Rather, one might say that we have tried to mold the child to the treatment program instead of the program to the child.

Like the proverbial blind men with the elephant, we have often drawn conclusions and generalizations concerning treatment about the "whole" based on whatever portions we have measured in our diagnostic workings; however, sad to say, we often have overlooked a common sense approach to treatment based upon the child's style of learning.

While we might like to understand and measure "the whole child," there are many reasons why we really cannot. We do not have the required range of skills as individual members of any given profession; we do not have available all the instruments or time to run the gamut of those we do have. Perhaps most crucial, we are presented (whether clinicians, researchers, or both) with specific questions to answer relevant to the settings in which we work. Thus we concentrate our effort on measuring or describing characteristics of the individual and his environment which appear relevant to these chosen variables. Such focusing is essential; it is only through a series of careful measurements of finite elements of behavior that the "whole child," or even the whole of the disorder, can be understood and a proper treatment program prescribed.

It has been said that learning to listen, to comprehend, to remember and recall, to formulate and express in an oral symbol code, and eventually to read and write in this same code is probably the most difficult and complex task a young child undertakes. The therapy program must be designed to help the child learn oral language through his specific combination of sensory, intersensory, memory, or motor abilities (Myklebust and Johnson, 1964).

It is to be remembered that whatever the age of the child, the development of a concept usually follows the order of perception, integration, association of ideas, and expression (Myklebust and Johnson, 1964).

It would appear that an adequate diagnostic evaluation should include an observation of the child's learning and behavior styles, modality strengths and weaknesses, as well as articulation difficulties, including spontaneous speech production, sound discrimination, deep testing of misarticulated sounds, stimulability in nonsense syllables (Carter-Buck), and intelligibility.

Upon reviewing the importance of modality, intactness, and level of involvement, the rationale for the present study was established based upon three possibilities of improvement in articulation through a modality approach to treatment: (a) the child might learn best through the unisensory approach to therapy, (b) the child might learn more rapidly through the multisensory approach, and (c) the majority of children still learn to correct articulation errors most rapidly through emphasis upon auditory training.

An attempt was made to investigate two types of approaches to therapy for speech handicapped children diagnosed as having articulation disorders and to compare the results of this treatment.

It was hypothesized that speech handicapped children given the traditional approach would show less improvement in articulation and less carryover into general speech habits than would the children given the modality approach over a two year period of time.

Method

Subjects. The 100 subjects selected for inclusion in this study were randomly selected from a larger population of 258 children having articulation problems who were awaiting entrance to a public school therapy program. The original screening of the subjects was done by four speech clinicians in two suburban school systems.

The children who met the following criteria served as subjects in this study:

1. "Normal intelligence" as determined by the recent Lorge-Thorndike group intelligence test
2. CA between six and eight years
3. No previous experience in speech therapy
4. No impairment on visual or auditory acuity
5. No evidence of severe or moderate dental malocclusions or "tongue thrust ing"
6. Two or more defective consonant sounds determined to be in error if misarticulated in either the initial, medial, or final positions in words (the Warnock-Medlin cards were used as the testing instrument for this purpose)

7. Misarticulation of 70 to 155 phonetic contexts on consonant sounds according to McDonald's deep test of articulation (1964).

Assignment of Subjects. The 100 subjects were divided into two groups and an initial comparison of 11 variables showed only one to be statistically significant; however, this was attributed to chance and not considered significant for purposes of the present study. The mean chronological age was 6.5 years, and subjects came from families of middle to upper socioeconomic status as determined by the Occupational Scale. There were 73 boys and 27 girls with the usual articulation errors ("r," "th," "s," etc.).

Treatment. One group received the traditional approach to speech therapy with heavy emphasis upon ear training, and the other group received therapy based on the modality approach. For purposes of this study, the modality approach was defined as the sensory channel most intact for input.

In the modality group there were 36 boys and 14 girls. Seventeen of the above were given the auditory approach, 17 the auditory visual, and 16 the auditory tactile approach.

In the traditional group there were 37 boys and 13 girls.

The modality approach was determined by a review of the cumulative records and the Illinois Test of Psycholinguistic Ability (ITPA). The above determination was made by six clinicians not involved in the initial survey in conjunction with a team of specialists composed of a school psychologist, clinical psychologist, pediatrician neurologist, diagnostic teacher, building principal, social workers, and this author. Concerns in the modality approach treatment program included:

1. An awareness of input before output
2. An awareness of differentiating meaningful units and associating these with the appropriate verbal symbols as well as the aspects of simultaneity and repetition
3. Vocabulary varied according to needs.

The modality group was divided into two subgroups with each of the four clinicians seeing 25 children in groups of two to three, three times per week in 30 minute sessions. The instruction period covered 25 weeks each year. The clinicians related groups at the end of each semester in order to help control the teacher variable.

The effects of the two types of treatment were compared by means of a pretest posttest battery. Each of the groups was administered the Peabody Picture Vocabulary Test, McDonald's deep test of articulation, Wepman's Test of Auditory Discrimination, McGrady's Memory for Sentences Test, and the ITPA after the first year of treatment and again after a second year.

Reliability. Each of the six clinicians who served as raters had three or more years of experience using McDonald's deep test and the ITPA. A series of five training sessions was held to increase the intergroup mean agreement of raters prior to the pretesting. The range of correlations for the reliabilities of the raters was from .88 to .98 with a mean correlation for all raters of .92. Each of the raters tested the same subjects at the time of the pre- and posttesting. Raters were not familiar with the subjects tested, and care was taken to insure that the raters had no knowledge concerning which subjects had received the traditional approach to treatment or the modality approach.

The rationale for speech instruction basically stressed speech behavior as a complicated, learned motor skill which becomes automatic through practice (Elbert, Shelton and Arndt, 1967).

The treatment approaches began with the usual sound in isolation from context, proceeded through the sound in syllables, the sound in sentences, and finally in conversational speech. Treatment was built around the key word and the success approach.

Results

Comparison of Direct Individual Difference Scores. During the pretest posttest period, both groups made significant improvement in articulation as revealed in the direct individual difference scores at the .05 level.

Comparison of the Speech Handicapped Groups. A comparison of articulation based on the pretest posttest difference scores between the two groups of speech handicapped children revealed that the children given the modality treatment showed significant improvement in speech over those given the traditional approach.

All the children made significant growth in the auditory decoding, vocal encoding, motor encoding, and auditory vocal sequential subtests of the ITPA.

Significant differences between the groups, however, were observed on the visual decoding and visual motor association subtests with those given the modality approach showing the greatest improvement based upon the pretest posttest group difference scores, as well as auditory memory.

Both groups made significant increases in the mean total language age scores on the ITPA. However, those given the modality treatment approach showed an increase of 10.5 months and the traditional treatment group, 8.9 months. Mean improvement for the modality approach group was 38.9 and 24.4 for the traditional. The second year showed an increase in language age scores of 11.2 months for the modality treatment approach and 8.3 months for the traditional treatment group over the previous year.

Tabulation and Analysis of Data. Because the same subjects were involved in the pretesting and posttesting, a direct difference method analysis was employed followed by a *t* test to determine the level of significance of change between the two testing periods for each group. The direct difference *t* statistic was used to show both the direction and amount of change between the pretests and posttests.

Standard *t* tests were computed to determine the statistical significance of the pretest posttest difference means between the two groups of speech handicapped children.

Discussion

The results of this study tended to give support to the hypothesis which predicted that children given the traditional ear training treatment would show less improvement in articulation therapy than would children given the modality treatment approach. It was interesting to note than 28 percent of the children given the traditional treatment approach and 49 percent of those given the modality treatment were dismissed from treatment as having made satisfactory progress. The results of the second year were comparable.

The basic premise underlying this study was that the clinician must be aware of the child's style of learning and plan his treatment program accordingly. Clearly, treatment approaches should include an awareness of the child's learning style, and the clinician should ask himself:

1. What are the child's areas of strengths and weaknesses?

2. What kinesthetic, visual, or auditory modality (or modalities) did this task require?

3. What other situations does he approach in the same way?

4. What is common to them all?

The communication program for a particular child should be designed to help him learn through his specific combination of sensory, intrasensory, intersensory, memory, and motor skills.

It would appear that the therapy program should emphasize the specific disability area, but use the intact language areas to strengthen the deficient areas. If the child has trouble understanding what he hears, visual or even kinesthetic cues may be incorporated within the auditory exercise to increase the probability of a correct response.

However, one must be careful not to overload the sensory channels but, rather, to utilize the one or two appropriate channels. The area of auditory visual integration and the intrasensory approach is still in need of much investigation.

The trend toward an increased awareness of the stimulability variable as well as approaches to learning should have a positive effect on treatment approaches in articulation therapy.

In essence, the clinician diagnoses the child's learning style by noting the areas of disability and the level at which the child can successfully perform. Remediation is the introduced to alleviate the deficiency.

Evaluation does not stop, however, with the beginning of the remedial or educational process; evaluation is an integral and ongoing part of the remedial program. If an activity proves ineffective, it must be recognized as such and replaced. No diagnosis is infallible, and no one activity helps all children. An ongoing evaluation attests to the accuracy of the initial diagnosis and provides information on the effectiveness of the remedial program.

An effective ongoing evaluation is something only the clinician can perform. One of our primary goals in education is to decrease the liabilities and increase the assets. But, sadly, we have all been guilty of labeling and forgetting the inter- as well as the intradifferences among children with articulation disorders.

Implications

What implications does this heterogeneity in children's learning approaches have for research in treatment? Obviously, it has many. However, until we begin to apply diagnostic instruments effectively, we will not be able to describe handicapped children in those terms that impinge directly on learning; we will continue with singular characteristics and treatment. Once research in learning characteristics begins to bear results and we can begin to classify children in accordance with shared learning abilities and/or disabilities, we can then begin to identify specifics in subject matter and teaching systems that are relevant to the characteristics of the children. Differential treatment should be a natural outgrowth of differential diagnosis, medical, language, or educational. As Binet in 1909 stated, "After the evil, the remedy: after exposing defects of all kinds, let us pass on to their treatment."

The results of the present study suggest several other possibilities for future research:

1. That the procedures of this study be replicated and include a larger sampling

2. That a long term longitudinal study is needed

3. That the operant conditioning approach to treatment be given further study.

Few approaches to the problems associated with conditioning and learning have received as much attention in the past several years as the experimental analysis of behavior, or operant conditioning. From its inception in experimental psychology, the experimental analysis of behavior has extended into diverse areas, including speech pathology. Operant conditioning principles have been utilized in considering stuttering, disfluency, and aphasia.

Certainly these principles have value for guiding the speech clinician in his clinical activities. It has been suggested that an operant conditioning approach frequently divides clinical activities into three chronological steps: (a) obtaining baseline measures of the behaviors of interest, (b) behavior modification, and (c) extension of stimulus control. These steps appear analagous to diagnosis and evaluation, treatment, and carryover.

Another aspect is that more research is needed in the schools where articulation disorders appear to prevail. For many years it appeared that research was the purvey of speech clinicians in institutions of higher learning. However, we are now beginning to see an interest in public schools as more districts have added research directors who direct the total research efforts of the school.

In speech pathology the basic needs still exist for practical research in survey methods, predictive (i.e., prognostic) techniques, therapeutic approaches, scheduling problems, and dismissal practices.

Meaningful research is both possible and desirable within the framework of the public schools, although problems with implementation are to be anticipated. Some of the pertinent difficulties are time, funds, merit of project, and the need for cooperation with other professional groups. Collaborative effort of the clinician and people actively engaged in research in the area, and also the availability of facilities for the collection, reproduction, and dissemination of data are required.

A Look to the Future

Looking to the future, we see that an analysis of both clinician and patient needs is the prerequisite to developing and applying strategies for continued upgrading of programs for those with articulation disorders. Real understanding of the patient with a speech disorder, his specific kinds of deficiencies, and the distances between self expectations, adaptation skills, and functioning level is essential. The particular teaching strategies and methods which will reach a patient need to be reviewed and evaluated. Continual striving toward understanding and improving knowhow for therapy and diagnostic skills is paramount for working with patients of various abilities, attainments, and aspirations.

The rapid growth of speech pathology taking place today will be further enhanced by federal, state, and private funding. At the same time, there is a substantial need to bring closer together those who work in schools and those who work in clinics, hospitals, training institutes, and private practices, and eventually bring to bear our collection of knowledge and help to discover the enigma of articulation disorders.

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MENTAL RETARDATION

TRANSLATING RESEARCH FINDINGS INTO CLASSROOM ACTION

by

Chester Loomis

"Do retardates learn more slowly and retain less well than normals, as has long been assumed?" is a question posed by Spiker (1966). In answer he states "The results of several recent investigations of the learning and retention abilities of retardates and normals have cast serious doubts about the general truth of that assumption."

To restate his hypothesis in a positive way, we could simply say: under certain conditions retarded children learn as rapidly and retain as much as normal children.

But of course as firing line practioners we know that this just doesn't seem to happen.

Impediments to the Learning of Retarded Children

Perhaps we can visualize a retarded and a normal child in a "run a race, win a prize" situation. Spiker's evidence has shown that each child can get off the blocks equally fast, and run at the same speed. But upon which would you place your money? Again, why? Because evidence has also shown:

1. That in all likelihood the retarded child may not be paying attention when the gun sounds, and may never leave the blocks
2. When he does run, although he can run as fast, he may wander all over the track in response to the varying sights and sounds he encounters, or because he really doesn't know where the finish line is
3. That he remembers he has always failed to win before, so he is not motivated to spend much energy on a hopeless proposition.

To round out the picture somewhat, consider our two subjects sitting before a job simulation bench. Each has a number of labeled boxes in front of him and a huge pile of objects to place in the boxes according to the labels. The Go! signal is given, and the contest begins. But immediately our retarded subject has trouble. He has a number of objects for which he has no box; he wastes valuable time hunting for extra boxes, or trying to force objects into boxes where they do not belong.

Now, what do these two examples illustrate? Simply that our retarded pupil:

1. Has an attention deficit; he may not hear or respond to the starting signal
2. Is stimulus bound; he runs all over the track instead of concentrating on the long range goal

3. Is failure oriented, so he doesn't try; the prize doesn't seem worth the effort, and he won't win anyway.

4. Hasn't developed enough conceptual categories to enable him to cope with the many stimuli he receives--not enough boxes, not enough ideational organizers with which to classify and store his experiences for action or recall and future use as needed.

Let us consider one of Spiker's points--acquisition of information or knowledge or learning. Many studies have indicated no difference between educable retardates and normal children in learning criteria. Others have shown a difference in favor of the higher IQ children. The presumed variable is *complexity*. The simpler the task the nearer the learning curve of the retardate approaches that of the normal.

Spiker (1966), after examining many studies, concludes: "These studies appear to indicate that acquisition of knowledge (in the retarded) depends on the complexity of the task to be learned..."

Suggested Classroom Practices

From that conclusion develops *Classroom Practice Implication Number 1: Simplify*. This disregarded rule is practiced more by teachers of the trainable than of the educable and practiced most by programed learning specialists.

On retention (or ability to recall what has been learned) among the retarded, Ellis (1963) states, regarding a Vergason (1964) experiment: "The results after 30 days suggest, as predicted, that when original learning is ensured, the defective's (IQ 60 to 75) retention is equal to that of the normal. This agrees neither with folklore nor with much current professional opinion." He further adds, three pages later, "Thus, from the standpoint described here, long term retention, a process seemingly closely related to the acquisition process, is viewed as 'Normal' in the retardate, i.e., equivalent to the process of the individual without CNS pathology."

H.B. Robinson and Nancy M. Robinson (1965) wholeheartedly support this position. They say, "Contrary to popular opinion, once a retarded subject has learned a response, he is about as likely to remember it as is a normal subject, provided, of course, that he has an equal opportunity to utilize the skills and information he has acquired (p. 330)."

Classroom Practice Implication Number 2: Plan for continued performance of what has been learned. Lance (1965) found that mentally retarded (60 to 80 IQ) subjects showed retention, "as measured by a decrease in the number of trials to relearn,...equivalent to the retention of normals."

And what was the consistent variable among these and other studies? *Overlearning*. To really finish the sentence previously quoted from Spiker we must add "...retention of knowledge is determined by the overlearning that takes place."

Vergason's (1964) finding was that retarded (IQ 60 to 75) and normal subjects did not differ on retention of an overlearned task after thirty days. Without overlearning, the retarded were decidedly inferior.

Classroom Implication Number 3: Teach for overlearning. This requires practice, about which something will be said later.

Prehm (1966) agrees with the premise that overlearning is of especial benefit to the retarded. He notes that "It has been shown that overlearning improved the retention performance of the retarded to a greater extent than it does of normal children." He also indicates that "The greater the difficulty of the task, the greater the reduction in retention loss as a result of overlearning."

Classroom Practice Implication Number 4: *The harder the task the more effective overlearning is in retention of learning*.

Goldstein and Seigle (1961) give us their statement of agreement with the above, and go on to give a practical example, as follows:

> Another pertinent result of research indicates that materials that are overlearned are retained longer than those learned only to familiarity. For example, in teaching a child a new word, the child may identify it correctly after the fifth presentation. The teacher may stop there and go on to a new word or she may go right on working with the same word with a number of presentations beyond the fifth. The probability that the child will remember the new word longer is enhanced by the few additional presentations of the word.

Returning to the notes of Prehm (1966) for a minute we further read:

> The literature also shows that distributed practice enhances the retardate's learning performance. This finding implies that the teacher should use several short teaching periods in the various areas of the curriculum during each school day. Rather than use the traditional approach to teaching arithmetic, for example, the teacher might spend only ten minutes introducing a particular concept. Later in the day she would review the concept and initiate a second ten minute practice period in the application of the concept. Still later she might have a third ten minute period for another brief review and the completion of assigned seatwork.
>
> Under this procedure the teacher would not expect complete mastery of a concept during the initial teaching period; mastery would be achieved only after a series of short practice sessions. This procedure would also allow the teacher to provide the contexts within which practice would occur This might have the effect of increasing the transferability of the concepts learned. It would also permit the teacher to introduce overlearning procedures in a more natural manner.

Classroom Practice Implication Number 5: *Distribute practice*.

Before we leave the subject of overlearning, or, to use words with which we may be more accustomed, repetition and practice, a note of caution should be sounded. Bigge (1964, pp. 296-297) sounds this most succinctly when he says

> ...repetition, *per se*...doing the same thing over and over again --does not teach. When we use the term *practice*, we refer to trials which have an experimental character; that is, trials in which the action is varied, even though slightly, and each time the learner asks himself either verbally or nonverbally, 'What does it feel like?' 'What did I do wrong?' or 'How can I do it

better?'

The implication inherent in that statement might be expressed this way: Classroom Practice Implication Number 6: Practice is repetition that is experimental and varied in character.

Additionally, making reference again to spaced practice, he says, "Virtually all of the research evidence seems to show that spaced practice is more efficacious than massed paactice."

There seems to be a measure of support for the position that retardates can learn some materials as rapidly as normal children, and that they remember overlearned materials as well.

To secure optimum learning and retention we should:

1. Simplify

2. Secure overlearning--provide for suitable and extended practice

3. Realize that the more complex the task, the more important and effective overlearning is

4. Distribute practice

5. Arrange practice so it will not be mere repetition

6. Insure continued performance of what has been learned.

But we still must admit, despite the proponents of the no deficit position, that mentally retarded children have a learning problem. To this we now return, and perhaps we can approach it through the words of Denny, and House and Zeaman.

Denny (1964) says:

> In view of the fact that what data there are do not support any sizable retention deficit, another possibility gains priority. Perhaps the retarded are poor performers because they are much poorer incidental learners than normals. Perhaps they learn little in the ordinary course of events, requiring special stimulation, guidance, and motivation to learn effectively.

This incidental learning hypothesis he mentions is seemingly closely related to a suggestion of Benoit's, in whose framework the retarded is seen as being stimulus bound, and tending to respond to the stimulus of the moment. In other words, as in our illustration, he may run wherever his attention is caught by some new sight, rather than respond consistently, as is required for learning, either to internal sets or external relevant clues.

House and Zeaman (1961) tell us that the problem lies not so much in inability to make discriminations but in inability to pay attention to relevant clues. The higher the mental age, the greater the number of clues observed, but the brighter learn to ignore those that have a very low probability of usefulness. The less intelligent are more equally attracted to all the clues they observe. They appear more distractible because they have not learned to ignore irrelevant dimensions.

This would seem to lead us toward a construct which might be stated thus: The retarded's apparent learning deficit may be the result of an attention deficit, and where attention is insured, learning may occur at a normal rate.

We would agree so far that the retarded has an attention deficit, but Scott (1966) states: "It has been shown that, once retarded children attend to the relevant features of a discrimination, they learn at the same rate as normal children."

He further says:

> The functions (of learning) are characterized by an initial period when the child is not attending to the relevant dimensions of the problem. He could be looking *out the window, dreaming, or trying to find* out what it is about the pattern of marks in front of him that makes two words different. It is with this process of detecting the critical features of a problem that the retarded child has difficulty. Once he makes this detection or attends to the relevant dimension of stimulus difference, he learns at the same rate as the normal child. This is not to say that Johnny will learn long multiplication in doing one particular sum. Long multiplication contains many discriminations or difficulties, each of which is learned in one or a few trials once he attends.

Attention, then, is a variable of prime importance in learning. And while the normal child usually manages his own, H.B. Robinson and Nancy M. Robinson (1965, p. 330) call our attention to the teacher's role with the retarded as follows: "For retarded children, management of attention is possibly the most valuable contribution a teacher can make." They further note that this same conclusion is supported by the learning constructs proposed by D.O. Hebb, Strauss and Lehtinen, and Montessori.

Scott (1966) provides us with three general principles for such management:

> First, the child's attention must be directed or attracted to the relevant dimensions of the problem and away from the irrelevant dimension. Second, when the correct attention occurs, it should be secured immediately by reinforcement. Third, to facilitate subsequent transfer of attention, it is necessary to have the first problem or a dimension overlearned before moving to the next. That is, some practice must occur after satisfactory performance has been achieved and before moving to the next problem in order to secure maximum transfer of attention from previous problems.

He translates these principles into specific rules for the classroom, the following of which we can add as numbers 7 to 13 of our Classroom Practice Implication list.

7. Avoid failure sets

8. Use novelty as remediation for failure set

9. Use easy to hard sequences

10. Use multiply relevant clues

11. Present material in sets that share common dimensions

12. Avoid unnecessary shifts of attention

13. Avoid variable and irrelevant clues.

A discussion of the development of these classroom teaching implications would require too much space here, so they will be left as they stand, except for the first--avoiding failure sets. Going beyond engineering attention, one very simple way of giving the retarded help seems to be in the ordering of the success failure complex. House and Zeaman (1960) found that mentally retarded subjects who practiced on easy object discrimination tasks learned more rapidly when presented with a difficult pattern discrimination task than a group which practiced first on difficult patterns.

H.B. Robinson and Nancy M. Robinson (1965, p. 330) remind us that the retarded child "has a history in which failure is much more prominent than it is in the child with normal capacities." They go on to note that studies by Heber (1964) and Gardner (1958) at George Peabody College confirm this hypothesis, and conclude, "On the basis of these studies, it appears likely that a great many retarded children have learned to expect failure and have also learned that after a failure it is seldom worthwhile to increase one's efforts, since further failure is so likely to ensue."

Heber and Gardner actually found that normal children tended to increase their efforts after a failure more frequently and to a greater degree than did retarded children of the same mental age. Under conditions of success, the opposite appeared to be true. For retarded children, success apparently contrasts with their previous history and spurs them to increase their efforts even more than it does for normal children, for whom success is common.

We turn now to still another area where research from various disciplines has focused upon a subject of interest and value to us. Remember the two boys in the job simulation test. These boxes were used to represent concepts, places where things that bore a meaningful relationship to each other might be stored, or ideational bins, if you will, into which the individual might toss the stimuli and impulses which occur in his life, and there compare them for goodness of fit, for determination of action, or simply for storage and future retrieval.

Research literature seems to illustrate conclusively that the retarded have a compraatively limited number of concept bins, and are consequently handicapped in the storing, processing, and retrieval of information.

To illustrate briefly what this is all about, consider these words: Thomasville, Karastan, Kerman (brand names of house furnishings). Into what concept bins do you place these? If they are used in a sentence how do you process them in terms of meaningfulness? Also consider the ideational bin arrangement that allows you to process the words pointer, setter, boxer, and nailer and to group those that "belong" in their proper box, and toss the odd member to its proper setting.

Stedman (1963) has found the retarded deficient in this ability to organize, to cluster, to group by some conceived commonality. Stephans (1963) found that retarded children appeared to possess a more limited number of response categories than did normal, and concluded that a diminished stock of conceptual categories would seem to impede future meaningful learnings. The retarded child simply lacks a response category or an organizing principle into which he can fit many new experiences.

To consider this concept in still another dimension, a study by Milgram and Furth (1967) showed that when children used a sentence frame, that is, verbally stated the correct principle to be followed at each choice point, their percentage of correct choices increased. In other words, verbalizing concerning the applicable organizing element or ideational bin increased correct response.

Denny (1964) concludes from the results of other studies of the use of such verbalization: "If the above findings hold up, the implications for training the retarded are clear: meaningful mediators can be established and can be expected to last."

Aurelia Levi (1966) of the Albert Einstein College of Medicine has found that working with children in terms of concepts (shape, size, use, aliveness, inclusion, exclusion, pairing, matching, relevant, irrelevant, analogy, seriation) all accompanied by verbal naming and defining, has resulted in noticeable improvement as measured by the Raven tests and by school reports.

From the foregoing two more classroom teaching implications can be established: Classroom Practice Implication Number 14: Much time should be spent in helping the retarded develop concepts, response categories, or ideational bins. Classroom Practice Implication Number 15: The verbalization of the response principle at each decision point is fruitful in increased learning --in other words--say it aloud.

Summary

To summarize briefly, during the course of this paper some fifteen ideas for classroom action with the retarded have been suggested. Most of them are applicable, of course, to normal children. But this is not to imply that what is good teaching for a normal class population is necessarily the best teaching for retarded. In fact, good teaching for a normal class must of necessity be quite inadequate for retarded children. Also, what we consider good teaching for retarded children might well be grossly inefficient with normal children.

To illustrate:

1. The time spent and methods required to secure and insure attention of the retarded can be both a waste of time and appear childishly immature teaching to the normal. The same can be said for simplification, when carried to the degree which is beneficial for the retarded.

2. The reduction of irrelevant stimuli in the retarded's environment which helps to produce optimum concentration and learning for him may produce only boredom and lack of stimulation and learning in the normal.

3. For the retarded a nonfailure oriented learning situation is almost without exception indicated. Actual failure, or even expected failure, usually induces decrements of effort in the retarded. This is quite contrary to the results obtained with the normal, where research seems to indicate that occasional failure is more often a spur to increased effort and success.

4. The amount of time required to secure an optimum degree of overlearning

among the retarded (remembering that this is greatly influenced by their attention deficit problem) is, for the normal, a waste of time and detrimental to their learning efficiency.

5. Much time which should be devoted to concept formation among the retarded is also contraindicated with normal pupils. They usually have, often through incidental and nonclassroom learning, developed and used a great many of the conceptual categories which must be developed, under teacher guidance, with the retarded.

In conclusion, in answer to the oft repeated question as to what is special about special education, Blackman (1967) concludes: "...special education for the mentally retarded has been a relatively unsuccessful enterprise simply because there has been very little special about it. It would appear that our objective in special education has been pragmatic and unambitious--that is, training mentally retarded children for well adjusted mentally retarded adulthood."

In a joint article with Sparks (1965), something of both his and Sparks' discontent with the status quo is shown in their concluding paragraph: "Proof must be forthcoming that there is more special about special education (for the retarded) than the children assigned to these classes."

However, limited as the investigation was for this short paper, several areas have been pointed out where researchers have shown that the implications for optimum teaching of the retarded are different from or in some respects opposite to those which we would call good for the normal pupil. It has also pointed up other areas where, while the implications may be the same for both retarded and normal, the use of a specific technique with the retarded is much more necessary if optimum teaching and learning is to result.

Fifteen such implications have been mentioned. It would seem that is just these were all put into practice with a single group of children, we would have something special to present, and could amply meet the criticism that have been leveled at our programs by the authors mentioned above, and by Johnson, Cassidy, and others.

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ABSTRACT

A PILOT STUDY OF CAMPING FOR THE MENTALLY RETARDED

by

Barbara Bateman

During the summers of 1965 and 1966, the Joseph P. Kennedy, Jr., Foundation sponsored these studies of camping for mentally retarded. Data were gathered on 145 retarded campers in six camps and on 39 noncamper controls. Data were also gathered on more than 100 counselors and 200 parents.

The findings included:

1. The families of retarded children strongly believe that camping for the MRs is of incalculable value to both the family and the child.

2. The attitudes of counselors toward mental retardation are measurably affected by the performance of the retardates.

3. Children whose IQs are in the 60's seem to benefit significantly more from the camp (in terms of test score gain) than do other groups of MRs.

4. Average IQ gains of 3 to 4 points seem to prevail for the better camps. This finding is directly in line with Oliver's (1958) 4 point gain obtained over a longer period of time in a camp situation which included a structured academic program in addition to usual camp activities.

5. There are significant differences among camps in terms of the measured gains made by the children. The general rule seems to be that the children learn, quite directly, what they are taught. Just as leg strength is increased by exercising legs, so language is developed by teaching language, etc. Thus, different camp programs produce different patterns of gains.

6. Individualized behavior modification programs were employed in the 1966 camp. Seven case studies were done in which specific behavioral changes were accomplished during the camp day (without interfering with the regular program); e.g., decreased crying, rocking, resistance to commands head hanging, etc.; and increased verbal interaction, eye contact during conversation, staying with peer group, etc.

7. No data were found to suggest that retardates and normals should necessarily be in camp together. Subjectively, our experiences at this point somewhat favor camping for retarded without normals present (except perhaps a very few as "models").

8. Specific recommendations for camping programs for the retarded were offered. To a large extent, they emphasize the importance of establishing very specific behavioral goals and outlining activities designed to accomplish those goals directly, minimizing reliance on transfer of training.

ABSTRACT

DEVELOPING LEARNING ABILITIES THROUGH SIGHT, SOUND, AND SYMBOL

by

Richard Weber

The method of Sight, Sound, and Symbol is a positive, practical and pleasurable approach to the development of learning abilities and basic communication skills: reading, speaking, writing, and listening. The first aim of this approach is to help the student directly and systematically cope with symbols on the printed page. This is a springboard of learning and permits the student to do things for himself. The second aim is to help the student successfully translate these symbols into a variety of meaningful feedbacks, one at a time.

This approach to learning is a result of experience with students ranging in age from two to over 70, and ranging in intelligence test scores from below 20 to over 140. These activities appear, therefore, geared to all students whether they are mentally retarded, of average intelligence, or intellectually gifted, and they are designed to serve the student entering his first formal learning experiences as well as the student who has developed inefficient learning patterns.

An endeavor has been made to avoid or prevent the recurrence of certain typical learning difficulties:

1. Scrambled seeing (b for d, p for q, was for saw, no for on)
2. Scrambled hearing (m for n, j for g, sixty for sixteen)
3. Scrambled speaking (flea for three, gwansigh for go on outside)
4. Scrambled writing (Ǝ for E, W for M, И for N).

The materials follow a theme and variation form. There are fourteen sets of symbolic variations (upper and lower case letters, numbers, colors, geometric shapes, squares containing straight and curved lines) on a single group of familiar melodies limited to a range of only six different notes (the fewest amount of notes with which there are a number of familiar melodies). The unique departure of Sight, Sound, and Symbol is that it varies the symbols rather than the sound. Each of the fourteen sets of six different symbols was purposefully selected to give the student the means to practice and eliminate specific perceptual problems which frequently appear in his learning experiences. Examples of several sets of symbols are as follows: (a) C D E F G A (the C and G and the E and F look alike to the student), (b) M P N B W R (the M N W and the P B R shapes look alike), (c) b d p q g k.

It appears that confusion of similarly shaped letters is due to the fact that the letters look alike to the student because of their structural similarities. Therefore, the student needs to focus on whatever element of the letter makes it structurally different. Some authorities believe that this sort of confusion is the result of lack of neurological organization, lack of spatial awareness, lack of laterality, etc. To cure these difficulties they recommend such diverse activities as walking across boards, creeping and

crawling, jumping on trampolines, putting barrels together, etc. It may be, rather, that such difficulties are due to lack of learned orientation to the printed page.

Music was selected as the medium to develop these communication skills because it evokes interest, curiosity, and response. The medium is the initial message, for the student's first response to the printed page is a nonverbal matching of symbols printed on the page with similar symbols placed on a keyboard instrument (small electric organ, toy piano, conventional piano). The student's ability to verbalize is not a required entering behavior. During this stage of learning--before naming or writing the symbols--the student learns to:

1. Differentiate similarly shaped symbols by being helped to focus immediately on significant structural patterns that make them different

2. Move consistently from left to right on the printed page

3. Cope with repeated letters in a series one at a time

4. Move down the page one line at a time.

After the student learns to read with both hands (one on the page and one on the keyboard) and can match all of the symbols with absolute accuracy, the feedback becomes speech. After the student can speak all the symbols, the feedback becomes writing.

Sight, Sound, and Symbol treats these three feedbacks to the printed page one at a time: SEE AND PLAY, SEE AND SAY, SEE AND WRITE. By dealing with only one translation at a time, the student is not overwhelmed by the printed page and he avoids the destructive state of "symbol shock," which could result in his shutting out not only all printed symbols but also any person making an effort to teach him these symbols. Of course, the greatest damage is that when one shuts out or suppresses anything from his reality, he also shuts out many other frequently valuable experiences.

It is believed by some that rhythm teaches poor coordination and can be devastating to basic learning processes. Sight, Sound, and Symbol is designed to establish a sense of timing, in a nonrhythmical sense, wherein the student learns to delay the feedback or action from the stimulus until his central learning processes have had time to become involved. Perhaps this is the vital thread that runs through the success and retention of these materials with such diverse groups as two year old normal boys and girls, four and five year old verbal and nonverbal mongoloid boys and girls, severely hyperactive children, adolescents, and adults diagnosed as emotionally disturbed and/or brain injured, and college level beginning piano students. To abstract from the printed page, one must first look at a symbol, take whatever time is necessary for translation, then act. Think then act, in that order. It is helpful to have severly hyperactive children think, think, think, then act. The time for translation varies from symbol to symbol and from individual to individual. If this learning phase is rushed or unnaturally enforced by an anxious or impatient teacher or parent, or by the student's own impulsiveness, learning and communication break down.

It well may be that this communication breakdown is the greatest single cause of behavioral and learning manifestations frequently diagnosed but seldom cured before the student develops inefficient patterns of learning that affects his entire being and becoming.

ABSTRACT

DESIGNING A REHABILITATIVE CULTURE FOR MODERATELY RETARDED, ADOLESCENT GIRLS

by

Judith LeBlanc, Joseph E. Spradlin, and James R. Lent

A rehabilitative culture was designed to develop the personal, social, educational, and occupational skills of 27 moderately retarded adolescent girls. The development of the culture involved modification of the physical and social environment, implementing an explicit, generalized reinforcement system and the initiation of specific training programs. Comparison of pre-experimental and followup observational data showed significant improvement in care of clothing, physical cleanliness, physical grooming, walking, and sitting. Improvements in verbal and social behavior were not demonstrated on the pre-experimental and followup comparisons.

ABSTRACT

REMEDIATION OF PSYCHOLINGUISTIC DISABILITIES OF MENTALLY RETARDED EMOTIONALLY DISTURBED CHILDREN: A COMPARISON OF TWO APPROACHES

by

Joseph G. Minskoff

The main objective of this study was to test the effectiveness of a psycholinguistic approach to the remediation of learning disabilities by comparing three groups: an experimental remedial treatment group, a comparison remedial treatment group, and a nontreatment group.

Thirty-two educable mentally retarded emotionally disturbed children comprised the initial screening sample. A pretest battery consisting of seventeen diagnostic subtests was administered to this group. The diagnostic battery, the major instrument of which was the Illinois Test of Psycholinguistic Abilities, was based on an extended model of psycholinguistic functioning.

Fifteen of the 32 children were selected and matched into triads. This was done on the basis of their psycholinguistic abilities and disabilities which were revealed in the pretest battery. The subjects in each of the five triads were randomly assigned to the three treatment groups. The experimental group received remediation based on a learning disabilities (i.e., psycholinguistic) approach; the comparison group received traditional or global remediation; and the nontreatment group received no remediation. The children in the experimental and comparison treatment groups were tutored individually for 30 sessions. Upon termination of treatment, all 15 subjects were reexamined on the 17 tests of the diagnostic battery.

Both a statistical analysis and a case study approach were used to examine the results of the remediation aspect of the study. These analyses showed a trend for the experimental group to make greater gains in psycholinguistic disability areas and overall level of functioning than either of the other two groups. It was concluded that the psycholinguistic approach to the remediation of learning disabilities was effective since the factor of attention was controlled by the inclusion of the comparison group.

Implications for future use of case study analysis, remedial methods, development of curriculum, grouping, and teacher training are discussed.

ABSTRACT

MEETING THE NEEDS OF PARENTS--MILIEU THERAPY

by

Bethel Lemmerman

There are several approaches to meeting the needs of parents. It is necessary to discover which method is the most beneficial.

It has been our experience that there are two primary concerns which must be reevaluated and reemphasized constantly. The first concept that must be kept constantly in mind is that the counseling of the retarded child and his family is an ongoing proposition and cannot be implemented effectively on an on and off basis, and that this counseling must be all inclusive in its approach, embracing the problems of all those individuals whose lives are intertwined in the overall picture.

The second concern is the personality and the knowledgeability of the counselor involved. Whether the counseling is on a one to one basis or on a predetermined type of grouping, primarily and inevitably the success or failure of the program rests in the hands of the persons responsible.

ABSTRACT

DEVELOPING TEACHER PRODUCED INSTRUCTIONAL MATERIALS--PART I

by

Wayne D. Lance

Panel: "Teaching Techniques and Materials for the trainable mentally retarded from five to 20"

A rationale for the development and production of materials by the teacher of TMR children was presented. Among the arguments presented to support this point of view were the following:

1. The teacher's awareness of pupil needs

2. The applicability of materials to teaching style and methodology

3. The benefits of the aura of experimentalism
4. The immediate need for materials
5. The relatively small size of the commercial market
6. The facilitation of evaluation and modification
7. The involvement of pupils in development and production.

Eight criteria for developing materials were discussed:

1. The need for a theoretical base
2. The benefit of stating objectives in an operational matter
3. The value of a developmental and sequential structure
4. The relevance of principles of learning
5. The relationship of learning and teaching styles
6. The implications of the social level of pupils
7. The need for a built in basis for evaluation and modification
8. The concern for intrinsic appeal of the material.

ABSTRACT

INSTRUCTIONAL AIDS FOR LANGUAGE DEVELOPMENT IN THE TRAINABLE PROGRAM FIVE TO 20

by

Susie Griffin

A fundamental principle of American democracy--to provide facilities for rearing children to lead well adjusted and useful lives--is the ultimate goal in the philosophy of education.

It is common knowledge that basic skills of reading, writing, and arithmetic are extremely important today because of the rapidity of technological and sociological changes. The acquisition of these skills is almost impossible without language development. Language development is basic to our culture and is recognized as a critical and complex problem with far reaching effects upon general scholastic achievement and emotional adjustment. In the trainable program, it is a critical problem.

Realizing the rapidity and increase of technological changes, we have utilized some of the instructional technological media in our classroom to elicit positive responses in the area of language.

Purpose and Methods of Classroom Language Study

The purpose of our study was to help clarify the relationship of instructional technology to language development. The hypothesis was that children who are severely retarded are not necessarily without built in cues to certain stimuli. We used as our criterion the reaction of most children to mass media--the television. Realizing the necessity of making the study meaningful and developing in a sequential order, the study began with the development of the concept of who I am.

A movie projector and an Instamatic camera were used to take pictures of the children to show them. We utilized their recreation period and took pictures of them bowling, playing ball, playing in the snow, dancing, etc., and the pictures were used as the basis for class discussion. Children who had previously uttered only sounds began to say words: me, I, my picture, my birthday, my ball, etc. We were mindful of the importance of Piaget's studies of the process of concept formation.

After the projector was used to develop the concept of who I am, we began the approach of how I sound. The tape recorder is an excellent medium for this, because the child becomes fascinated with his voice.

The tape recorder can be an excellent source of instructional aids for the teacher of older boys and girls in the Trainable Program. Lessons can be taped days before the presentation and the teacher can allow her aide to work with one group using the tape, while she is working with another group. Also, in the teacher's absence the substitute teacher can utilize the tape as a method of proximity control, since the familiar voice of the teacher offers support to the children.

We are mindful of the power of the television, therefore we feel that the overhead projector is an excellent vehicle to convey messages to our children. If they can remember certain television programs almost verbatim, they can be expected to remember some of the material prepared on overhead transparencies.

Self protection words were prepared for daily use on the overhead projector--stop (along with the symbol of the red light), danger, poison (along with the symbol of a skull), lavatory, etc. Also, transparencies were used for instructions for making jello and other simple desserts, and the children were shown transparencies for simple sewing.

Modification of instructional techniques used with the younger children can successfully be used with junior and adult trainable persons.

Slide pictures can be taken of the students more adept at such activities as preparing foods, working the home making area, working in leather craft, and shown to the less adept, with the help of the teacher aide, while the teacher is working in another area with the advanced student; or the slides can be utilized to reinforce a lesson.

It is important to reinforce language development through the use of a variety of sense modalities: visual, vocal, auditory, and kinesthetic; and it is essential that any instruction for the trainable mentally retarded be systematic, meaningful, sequential, and--most important--individual.

It is also important that there is no undue initial concern with phonetic structure as such, semantic level, or morphological endings. The primary concern is with helping the child to talk.

ABSTRACT

A CENTRALIZED FACILITY FOR THE MENTALLY RETARDED: FIVE POINTS IN FAVOR

by

James Q. Affleck

The terms integration and segregation, as they are used in reference to the placement of educable mentally retarded students, are considered invalid because they tend to be confused with the broad social issue of integration and segregation of minority racial groups. Meaningful factors are better discerned when placement is considered as either centralized (special school) or decentralized (special class placement). Centralized placement is advocated for educable mentally retarded adolescents in urban settings, and five points are included as substantiation.

Instruction is served through consolidation by allowing an accumulation of equipment and materials and permitting teacher specialization to a degree unlikely in decentralized programs.

The nonacademic curricular areas, those areas most closely tied to later vocational adjustment,can be developed specifically for retarded learners.

A centralized facility presupposes an administrative structure trained and committed to the education of the mentally retarded. Postgraduate education (+18) and family and student guidance can be maintained into the adult life of the student.

The greater specialization afforded the centralized facility offers a more varied practicum, preservice and inservice resource than the decentralized program.

There is more opportunity for the centralized facility to evolve into a community center for the mentally retarded that could promote the shelter, and continue training and guidance for these individuals in an urban setting of growing complexity.

ABSTRACT

A PUBLIC SCHOOL PROGRAM OF INTEGRATION

by

Kathy Lawrence

The effectiveness of Special Class programs for the educable mentally retarded versus allowing these youngsters to remain in regular classes has been

discussed pro and con for many years. Little has been written on parttime placement of the educable mentally retarded in classes with average children based on educational prescriptions for each educable mentally retarded child. Placement needs to be carried out on an individual basis to be of maximum benefit and geared to the needs of each educably mentally retarded youngster. An attempt is made to describe the first steps toward such a plan. Both the strengths and weaknesses are presented as well as background preparations and initial measures necessary to initiate this program and set it into action.

ABSTRACT

AUDIOVISUAL INSTRUCTION TECHNIQUES IN THE EDUCABLE MENTALLY RETARDED CLASSROOM

by

Steve A. Brannan

The development of a technology of the instructional process is having a positive effect on classroom instruction in both regular and special education. In mental retardation, the utilization of audiovisual aids with mentally retarded children is seen as a significant factor affecting an increase in the learning level of this particular group. Some of the newer educational media gaining much prominence with the retarded include video tapes, polariod type cameras, teletrainer units, record players and tape recorders with earphone headsets, and 8mm "single concept films" or "film loops". Unfortunately, a paradox seems to exist in that many audiovisual aids are being recommended, but little information is available for teachers concerning the best methods of utilizing instructional media.

Of special significance for the teacher of the retarded is the need to know the most effective methods of utilizing instructional sound films in the classroom. Of all the different instructional media, the motion picture must be recognized as the one most thoroughly studied and the one proven to be an effective educational medium for use in the classroom. Still, there has been a lack of research evidence on the value of film learning with educable mentally retarded children. More specifically, little effort has been made to determine the applicability of proven methods of film teaching with normals to populations of mentally retarded children. Noting this problem, Brannan (1965) investigated five different methods of film teaching with twenty intermediate special classes of mentally retarded children in the Portland, Oregon Public Schools. Utilizing a commercially produced instructional sound film, the twenty classes were randomly assigned to one of the five different methods of film utilization:

Method A	Introduction film showing
Method B	Introduction film showing, film reshowing
Method C	Introduction film showing, pupil participation
Method D	Introduction film showing, discussion
Method E	Introduction film showing, discussion, film reshowing

Also studied was the effect on film learning when retarded children received either immediate or delayed knowledge of their film test answers. Two significant aspects of the study were the utilization of a specially designed film study guide and an objective test to direct and evaluate, respectively, the pupils' film learning. Practical results and recommendations adapted from the study include the following:

1. Film teaching utilizing any of the five methods results in significant learning: all film methods seem to be equally effective, and retention of learned film material is increased when children receive a knowledge of their film test answers.

2. Increased use of instructional sound films should be promoted with educable mentally retarded children.

3. In regard to effective film learning, increased recognition should be given to how a film is utilized in the classroom. If both effective learning and utilization of time are to be recognized, Method A combined with the providing of correct film test answers during or closely following a film test is highly recommended for use with educable retardates.

4. Present day instructional sound films, effectively utilized, are quite applicable with educable mentally retarded children.

5. Increased efforts should be made in constructing and utilizing objective tests to measure the film learning of educable mentally retarded children and these tests should be administered orally to the class.

6. Since the film study guide is seen as a powerful method for motivating and directing film learning, greater efforts should be made in the construction and utilizition of film study guides with educable retardates.

7. Teachers of the mentally retarded should be familiar with, and employ successful methods of, utilizing instructional sound films in their classrooms.

Reference

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ORGANIZATION OF CAMPING PROGRAMS FOR THE MENTALLY RETARDED

by

Robert A. Sternberg

The information presented in this paper is based upon the experiences encountered in organizing and implementing the program at Camp Jimmy, a day camp for exceptional children in Baltimore, Maryland. The term "Exceptional Child" to identify the campers refers to those children diagnosed as mentally retarded, neurologically impaired, deaf, aphasic, and emotionally disturbed.

In order to prevent the overlapping of topics to be presented, this paper will not concern itself with specific recreational activities but will discuss two areas of prime concern in the organization of a day camp program: Selection of Campers and Safety Precautions.

Selection of Campers

The responsibility for the selection of campers should rest entirely with the camp director who is aware of the needs of the prospective campers and of the camp. Experience has demonstrated that the most accurate method of selecting campers is by interviewing each child with the family in their home. This method has proven far superior to the traditional screening of psychological, medical, and educational reports. It is this author's philosophy that all children have the right to that type of camping program from which they can benefit the most. The criteria for camper selection should be kept extremely flexible as the intent of any camping program should be to provide a service based on a child's abilities and not to concern itself with the maze of diagnostic labels based on a child's disabilities. An example of flexible criteria that has proven workable is camper selection based upon ability to walk, ability to communicate verbally or by gesture, and ability to care for toileting needs.

Once the selection of campers has been made, the camp administration must concern itself with appropriate grouping. There are countless theories about the grouping of exceptional children, however, for a purely recreational camp program, practical experience has proven the worth of grouping based upon physical size, muscular coordination, and communicative abilities--not upon diagnoses. Admittedly, this method has limitations but it also offers a feasible solution to the grouping problems presented by the varied needs of the exceptional child.

Safety Precautions

In order to offer a worthwhile program to the campers and to ensure the parents of their child's well being, a variety of safety precautions must be incorporated into the camp program. Camp administrators must keep in mind that any form of negligence, no matter how minute, which results in harm to a camper places the camp and its staff in a legally responsible position. It is a must for the camp to purchase liability insurance for every camper and to require the parents to present evidence of medical insurance for their child. The camp should receive a permission slip for camp attendance from each child's physician along with a detailed description of any medication the child uses. The campers should also receive an examination from the camp nurse during the first days of each season. It is highly recommended that the nurse have past experience with handicapped children, especially with children having seizures. (It is relatively easy to hire such a nurse by contacting the Directors of Nursing at nearby state hospitals and obtaining lists of nurses who have resigned due to pregnancy. Such nurses are usually willing to obtain summer work if they can bring their child with them to camp each day.)

The major concern is group size and staff ratio. A ratio of three counselors per group of ten campers is sufficient in most instances. In the case of children with severe communications disorders, a ratio of five counselors per group of ten children is recommended.

Suggestions

The above mentioned precautions should be an integral part of any camp organization. The following suggestions have been incorporated into the Camp Jimmy program during the past three years; some may prove applicable to other day camping programs:

1. Campers who have at any time had seizures should wear a red shirt during the camp day, including the period when their group is using the swimming pool.

2. Campers should be brought to the infirmary area for their medication. Medication, under no circumstances, should ever be given by a counselor.

3. Two way radios (walkie talkies) should be given to each group so that the counselors are in constant contact with the nurse and director even while their group is away from the central camp area. The value of these radios cannot be overestimated in the event of a seizure while the group is on a hike, or in the event of other sudden or unforeseen hazards.

4. The swimming pool should be divided into areas by the use of nets (cargo nets available at any surplus store) instead of lifelines, since the hyperactive campers quickly walk under lines.

5. The camp day should be totally structured from morning until night. All activities should be rigidly scheduled, and attendance for campers and counselors must be mandatory at all times. Prior to camp, it can be explained to all parents that it is their responsibility to keep the child home when he is sick, since any child sent to camp must participate in all activities of the day.

SELF-CONCEPT OF ABILITY AS A WORKER: A MEASUREMENT DEVICE FOR USE WITH EMR ADOLESCENTS

by

Donald A. Burke and Donald F. Sellin

It is the purpose of this report to discuss the development of a measurement device adapted from the Brookover General Self-Concept of Academic Ability Scale (1962, 1965, 1967). It is intended to be used by teachers, vocational counselors and other professional workers interested in the vocational adjustment of the educable mentally retarded (EMR).

Goldstein (1964) has observed that "From the time of the first treatment center for the mentally retarded in the mid nineteenth century, the major goal of interested disciplines and services has been to help the mentally retarded individual achieve social and occupational adequacy at maturity (p. 214)." This interest in social and occupational adequacy of the mentally retarded, particularly the EMR, has developed to the point that mass media, governmental agencies, foundations, and occasionally private industry and educational institutions, seem to be concerned enough to testify that "the retarded can be helped", or that "they are reliable workers", or that "they can learn." One would think that all that needs to be done is to train enough personnel to carry on the teaching, training, counseling, placement and followup and our major goal will have been satisfied. The unfortunate truth is that:

> The occupational picture for the retarded is far from encouraging. Occupational categories once the province of the retarded have been decreasing markedly in the past half century. Predictions of experts indicate that this trend will persist, but at a reduced pace. Much of the disappearance

> of jobs for the retarded may be attributed to technological changes wrought by automation and mechanization in industry, on the farm, and in homes. Competition for remaining jobs has become more keen because of the large labor pool available for such work. The spotty nature of this problem has created conditions in a limited number of occupational centers. It is suggested, however, that this problem will become more universal as technological changes take place.
>
> Indications are that training programs as well as counseling and guidance services for the retarded are already playing a critical role in the social adjustment of these workers (Goldstein, 1964, p. 254).

The Self Concept

At least one prerequisite for social adjustment and/or occupational adequacy is suggested in this comment by Combs (1962), "Extremely adequate, self actualizing persons seem to be characterized by an essentially positive view of self (p. 51)." Apparently this observation that the adequate person tends to have a positive view of self is acceptable to personality theory. Heber (1964) notes, "Central to a number of contemporary theories of personality is a global concept which, in general, refers to the sum total of all the characteristics a person attributes to himself, and the positive and negative values he attaches to these characteristics. Rogers (1947) has termed this the 'self concept' (p. 146)."

Goldstein and Seigle (1958) in discussing characteristics of the EMR, observing how inadequate feelings of self worth might develop:

> A characteristic of educable mentally handicapped (EMR)... is that of self devaluation. This characteristic is a result of imbalance between the child's competencies, intellectual and physical, and the demands of his environment. Self devaluation most frequently manifests itself in behaviors and attitudes signifying that the child has strong feelings of general unworthiness and that he holds his abilities in low esteem (p. 12).

Interestingly, this global view of self, sometimes referred to as the phenomenological self, has generated a considerable body of literature. However, as indicated by Heber (1964), "Despite the importance of global concepts of 'feelings about one's self' in contemporary personality theory, one can only speculate about the self concept of the mentally retarded (p. 147)."

Concerning the limited amount of literature in this area related to the retarded, one would have to be honest and suggest that if the global strategies established in investigating self concept in the general population were adopted as standard procedures for investigating self concept of the EMR, the usefulness of the information might continue to elude us. Certainly one of the problems in identifying the relevance of research findings of self concept studies to how people behave is related to the use of multifactor instruments and the desire to express results as an indication of subjects' general self concept.

It would seem then that the very characteristic thought to be essential to social and/or occupational adequacy is often less than adequate in the EMR population and yet, as presently defined, appears to be extremely difficult to study with any consistency.

W.B. Brookover and his associates at Michigan State University (1962, 1965, 1967), influenced by symbolic interaction theory, particularly as detailed by George Herbert Mead (1934), have concerned themselves with the development of a theory of school learning which refers to a category of symbolic behaviors defined as "...the evaluation one makes of oneself in respect to the ability to achieve in academic tasks in general as compared to others (Brookover, LePere, Hamacheck, Thomas and Erickson, 1965, p. 51)." According to Brookover(1967):

> The basic propositions of this theory assert that a student's self concept of academic ability results from his perceptions of the evaluations significant others hold of his ability. The student's self concept of academic ability in turn functions to limit the level of academic achievement attempted. Self concept of academic ability is therefore hypothesized as an intervening variable between the expectations and evaluations of significant others and school achievement. The relationship of perceived evaluations of significant others is conceptualized as a necessary and sufficient condition, i.e., a change in the perceived evaluations of others will be reflected in a change in self concept. The relationship of self concept of ability to academic achievement, on the other hand, is hypothesized as a necessary but not a sufficient condition for the occurrence of a particulary level of academic performance (p. 140).

Recently, Brookover and his associates have extended their research interests to the EMR and the effect of special class placement on the self concept of academic ability. (Towne and Joiner, 1966; Schurr and Brookover, 1967)

The General Self Concept of Academic Ability Scale

The authors of the present report, generally influenced by the social theory of mental retardation as discussed originally by Dexter (1958) and more recently by Mercer (1965), as well as the work cited above, and with encouragement from Brookover, have adapted the General Self Concept of Academic Ability Scale (Brookover, 1962, 1965, 1967) for use with EMR adolescents. The nature of the scale adaptation, the scale itself with a description of the items, general results of tests of reliability, and recommendations for using the adapted scale will follow.

There is reason to believe that as the EMR moves through the several levels of program provided by public schools he is likely to find an increasing emphasis on vocational adjustment and decreasing emphasis on academic performance. This assumption is at least partially supported when one considers the expansion of vocational rehabilitation services for the EMR at the secondary school level and the emergency of cooperative agreements between public schools and state rehabilitation agencies as authorized under P.L. 89-333. This vocational trend of many secondary level EMR programs prompted the authors to modify the Brookover scale in such a way as to measure the EMR's self concept of ability as a worker rather than his self concept of academic ability.

The measurement device, which employs an interview technique, is organized into six distinct sections:

1. Sample Questions. It is the purpose of this section to determine to what extent the adolescent EMR is able to respond to the type of questions asked in the scale itself. Specifically, the interviewer gives the subject an opportunity to state preferences (favorite TV programs and favorite cars), an opportunity to relate how he thinks his parent(s) or guardian(s) would answer a specific question (my father thinks Ford cars are: (a) the best, (b) above average, (c) average, (d) below average, (e) the poorest). The adolescent EMR is also asked to think about his parents or guardians, his best friend, and his favorite teacher and indicate how he thinks they might rate his favorite TV program (Sample question number 1). Finally, the interviewer discusses the concept of job ability (how well one will do in work) to insure that the adolescent EMR does understand the general nature of the scale. It should be noted that no score is achieved in this section and that it is the judgement of the interviewer which determines whether or not the scale should be administered beyond this point.

2. Significant Others. This section is designed to find out from the subject who the important people are in his life. The subject has an opportunity to answer this question first in a general way, then specifically as it relates to (a) those who are concerned about how well he will do in work, and (b) those who are concerned about how well he will do in school. In each case the relationship between the subject and named person(s) is determined.

3. Self Concept of Ability as a Worker: General. This section which consists of thirteen questions is designed to allow the subject to rate himself in job ability as compared to friends and classmates. It also asks him to think about his ability to hold a job, how he would rate himself with most people, his ability to become a skilled worker (secretary, machine operator, etc.) by completing special or additional training, and the pay he thinks he is capable of earning for his work. There are eight such basic self concept of work ability questions, each one providing five possible answers generally ranging from "among the best" or "I'm sure I can" to "among the poorest" or "I'm sure I can't." There is also an opportunity for the subject to think about the kind of job he would like if he were free to choose any job and a similar question related to staying in school and getting as much training for a job as he would need. In both cases there is a companion question which asks if the subject expects he could reach the stated goal. The remaining question asks the subject to name the one person he would want to be like.

4. Perceived Self Concept of Ability as a Worker: Parents. In this section, which consists of five questions, the subject is asked to answer questions related to his job ability as he thinks his parent(s) or guardian(s) might answer them. For example: "How do you think your parents would rate your job ability compared to other students your age? (a) among the best, (b) above average, (c) average, (d) below average, (e) among the poorest."

5. Perceived Self Concept of Ability as a Worker: Friend. The nature of the five questions in this section is the same as above except that it allows the subject to respond as he thinks his best friend might respond. For example: "Where do you think your best friend would say you will rank in job ability when you leave school? (a) among the best, (b) above average, (c) average, (d) below average, (e) among the poorest."

6. Perceived Self Concept of Ability as a Worker: Teacher. In this final section the subject thinks about his favorite teacher and answers the five questions as he or she might. For example: "Do you think that your

favorite teacher would say you have the ability to hold a full time job? (a) yes, definitely, (b) yes, probably, (c) not sure, either way, (d) probably not, (e) no."

Relative to scoring procedures, the scale is made up of thirty-one questions, six of which cannot be assigned numerical scores as they ask for names of people or the kind of job the subject wants or expects to get. Two other questions which relate to the kind of school experiences the subject wants and expects to get are scored on a four point scale. The remaining twenty-three questions are assigned scores on a five point scale where "a" responses get five points, "b" responses get four points, "c" responses get three points, "d" responses get two points and "e" responses get one point. The number of points a subject could score then would range from a low of 25 to a high of 123. It is possible to compute subscores on four of the five sections of the scale itself as follows: The Self Concept of Ability as a Worker: General scores would range from 10 to 48; The Self Concept of Ability as a Worker: Parents section as well as the Friend and Teacher sections scores would each range from 5 to 25.

Methods used to Determine Reliability and Usefulness of Scale

In an effort to determine the reliability and possible usefulness of the Self Concept of Ability as a Worker Scale the authors sought to enter a cooperative arrangement with a vocationally oriented secondary school level program designed for EMR adolescents. Such an arrangement was made with the Kent Occupational Education and Training Center (KOETC) located at Wyoming, Michigan. The center, which meets the program standards as defined by the Michigan Department of Education, offers classes, both academic and nonacademic, geared to functional literacy, a sheltered workshop setting for vocational diagnosis and evaluation purposes, community job placement and followup, a well rounded program of physical education, driver education, city wide school athletics, and a variety of extracurricular activities for its students (1968).

During the school year 1965-66 there were 84 students enrolled in the KOETC program. Their ages ranged from 16 years, one month to 19 years, eight months. The IQ's of the group ranged from 50 to 83 as measured by the Wechsler Adult Intelligence Scale.

A test and retest procedure was adopted to determine the stability of the scale. It was agreed that, using the interview technique recommended by the authors, an adult familiar to all the subjects would administer the scale on both occasions. The person selected was a certified teacher of the EMR employed by the Kent County (Michigan) Intermediate School District. The amount of time between the two interviews in each case was set at 30 days. Pearson product moment correlation coefficients were calculated to determine the extent of linear relationship between the test and retest of the 84 subjects, not only appropriate subtotal and total scores, but also on each item.

In an effort to determine to what extent the scale was internally consistent the authors employed a technique discussed by White and Saltz (1957). They advocate the use of the Phi Coefficient (Øit) primarily "...because computation is easy and because the significance level of the obtained statistic can be determined exactly (p. 93)."

Although no attempt will be made here to discuss the specific results of the analyses mentioned above it may be said generally that, within the limits of the population used and the procedures employed, the scale does meet criteria of temporal and internal reliability and that the results to date compare favorably with those reported by Brookover and his associates (1962, 1965, 1967).

Observations

Due to the fact that the cooperative arrangement between the authors and the KOETC only dates back two and one half years, any discussion relative to the specific usefulness of the scale would be premature. However, the vocational placement workers of KOETC have been using the scale each year and some interesting observations have been made by them. For example, in the work placement followup period for the school year 1966-67 (the first group of workers to have been measured once during their prevocational experience and again a year later during their on the job training) it was observed that, of the 29 graduates that year, the four workers who had given themselves the lowest total scores in both interviews (indicating a low self concept of ability as a worker) were evaluated by employers and vocational followup personnel as having serious problems in their work performance. The four workers who had given themselves the highest total scores (indicating high self concept of ability as a worker) were evaluated as having outstanding work records, in fact three of the four were recipients of school awards for having maintained excellent work records. Employers and staff involved in the performance evaluations were not aware of the Self Concept of Ability as a Worker Scale scores at the time their evaluations were made. We do not, of course, offer this information as evidence that the scale has value. That remains to be demonstrated as workers in the field begin to use the scale.

Potential Usefulness of Scale

Concerning the use of the Self Concept of Ability as a Worker Scale, the main point which the authors would like to stress is that the scale is to be used as an aid in teaching and counseling the EMR adolescent. We would hope that no one would use the scale as a screening device to include or exclude individuals from vocationally oriented programs. We propose that the scale should be used as an aid to a teacher or a vocational placement worker, not in deciding whether or not an EMR is ready for a work placement, but rather as an indicator of: (a) the kind of classroom activities which should be devised to support the youngster as he prepares himself to enter the world of work, (b) the kind of job that should be selected, specifically as it relates to the perceived ability of the youngster, and (c) how much supervision a youngster will need when is placed on a job.

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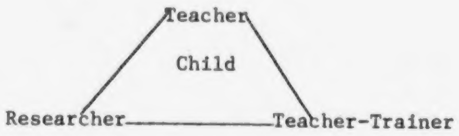
ABSTRACT

PDK GOOD PRACTICES CONFERENCE FOR TEACHERS OF THE MENTALLY RETARDED: AN INNOVATION IN "INSERVICE TRAINING"

Alexander L. Britton

Special Education has matured to the degree that documentation is no longer necessary when one espouses functional goals, through assessment planning and evaluation in education of the mentally retarded. The question arises, however, as to whether special class teachers are aiding children to accomplish those stated goals.

An area of apparent weakness may exist in a breakdown of communications within the education triangle:



Often trainees are unable to test new ideas, while experienced teachers reinforce old and perhaps irrelevant techniques, colleagues lack facilities for sharing, and researchers lack feedback from the classroom.

The Phi Delta Kappa, Gamma Rho Chapter's one day conference utilizes mentally retarded children as subjects for demonstrations before groups of 20 to 25 conferees. Master teachers share assessment procedures, strategies and techniques for teaching the retarded at various age levels. Curriculum guides, courses of study, and current research may be tested in classroom settings. Opportunity is provided for critical evaluation, justification, and a dialogue among the members of the triumvir is established.

The following examples may illustrate:

1. (Middle grades) A Long Beach Unified School District teacher demonstrated a lesson on health and self care, emphasizing temperature and the thermometer, showing the transition from calendar and weather to normal room and body temperature.

2. (Primary grades) A Placentia Unified School District teacher demonstrated the utilization of the Peabody Language Development Kit correlated with finger play, stick and bag puppets.

3. (Upper grades) A psychologist presented Illinois Test of Psycholinguistic Abilities profiles and conferees explored the development of strategies and planning for the subjects.

The conference is cosponsored by California State College at Long Beach, the California State Department of Education, Division of Special Schools and Services, and the Superintendent of Schools Offices of Los Angeles and Orange Counties.

AN INVESTIGATION OF THE DOMAN-DELACATO THEORY OF NEUROPSYCHOLOGY AS IT APPLIES TO TRAINABLE MENTALLY RETARDED CHILDREN IN PUBLIC SCHOOLS

by

John R. Kershner

The central concept of the neuropsychological theory proposed by Doman-Delacato is that of neurological organization. This concept assumes that ontogeny (the process of individual development) recapitulates phylogeny (the process of species development). The development proceeds in an orderly anatomical fashion through the medulla and cord, pons, midbrain and cortex, and culminates in cortical hemispheric dominance. According to this rationale, the individual's development of mobility, manual competence, tactile competence, vision, audition, and language parallels, and is functionally related to, his anatomical progress.

It has been further reasoned that degrees of incapacity of the locomotor and sensory modalities are a function of degree of insufficiency of neurological organization. Thus, by measuring the level of neurological organization, it theoretically becomes possible to prescribe activities aimed at facilitating the developmental process and eliminating dysfunctions. Diagnosis must attempt to evaluate the total person with respect to all sensory pathways, as prescription must attempt to treat the total person via all such pathways.

Application of the concept of neurological organization has resulted in the Neuropsychological method of treatment for the mentally retarded, according to which cognitive functioning is related to neurological development as evidenced by perceptual motor ability.

One of the important causes of mental retardation is injury to the nervous system, especially the brain. Proponents of the Neuropsychological approach assert that it is possible to restore brain functions that have been impaired or badly developed by subjecting the child to a treatment program aimed at developing proper neurologic functioning. It is their contention that learning disabilities of an organic causation have their origin in the brain; therefore, efforts to overcome such deficiencies should be directed toward the brain.

The purpose of the present investigation was to determine the effects of a structured program of physical activities consistent with the Neuropsychological Theory on the physical and intellectual development of trainable mentally retarded children and thereby assess the Theory of Neurological Organization in a public school setting.

The study was conducted in two schools of the Northern Lehigh School District, Lehigh County, Pennsylvania. Subjects consisted of 30 trainable mentally retarded children: 16 control subjects and 14 experimental subjects. Treatments were randomly assigned to intact classes, and in each case administered by a teacher and teacher aide. The teacher of the control group received individual and group instruction designed to impress upon her the experimental, innovative and beneficial nature of her program, and to initiate her into its implementation. The teacher of the experimental group attended a seven day orientation course offered by the Institutes for the Achievement of Human Potential in Philadelphia. At no time during the course of study was the term "control group" used: all personnel involved in the conduct of treatment procedures believed both groups to be experimental.

The hypotheses, stated in question form, were as follows: (a) Does a program of specialized physical activities that is consistent with the Doman-Delacato Theory of Neurological Organization contribute to the creeping and crawling ability of trainable mentally retarded children? This question assumes importance in that creeping and crawling abilities are the motor expressions of critical levels of neurological organization. In this role improvements in creeping and crawling abilities would signal enhancement of mobility and consequent neurologic functioning. (b) Does a program of specialized physical activities that is consistent with the above theory contribute to the perceptual motor proficiency of trainable mentally retarded children? (c) Does a program of specialized physical activities that is consistent with the above theory contribute to the functional intelligence of trainable mentally retarded children?

Pretesting

All children were pretested on creeping and crawling ability via a forty-eight point scale originally developed by Dr. Robert Doman, on perceptual motor proficiency via the Kershner-Dusewicz-Kershner (KDK) group adaptation of the Oseretsky, and on cognitive abilities as measured by the Peabody Picture Vocabulary Test (PPVT) Form B. The groups were similar in creeping and crawling and perceptual motor proficiency but they differed significantly on the PPVT.

Method

The experimental and control programs were in effect from November 1, to February 28, 1967: 74 school days, with the interruptions of Thanksgiving and Christmas vacations. The experimental treatment is based on the assumption that experience affects the brain and that specific types of experience will affect specific levels of the brain.

Activities are sequentially structured according to the neurological stages of development. Each stage is described by qualitative levels which allow the individual to perform at his own functional level. Hence, activities designed to develop a particular neurological stage are essentially group activities, although an individual program of treatment based on specific evaluation of competency is prescribed for each child. Each child is taught to master his lowest functional level before going on to the next higher level. The experimental program thus centered around a one hour per day period of the mobility activities which aim to enhance neurological organization, and activities inducing stimulation through all the sensory modalities. The entire school curriculum, five and one half hours per day, involved activities consistent with the Doman-Delacato Theory of Neurological Organization. The more strenuous activities were conducted in a multipurpose room, the remaining activities taking place in the classroom.

The control group program, in effect for the same period of time, was one of nonspecific activities. The games and exercises of this group were constructed to give reason for the teacher to direct individual and group praise and encouragement. The children were given attention and exposed to enthusiasm approximately equal to that received by the experimental group. The program centered around one hour per day of gross motor activities, and varied games and exercises. The more strenuous activities were conducted in a multipurpose room, the remaining activities taking place in the classroom.

Posttesting

Posttesting was conducted at the conclusion of the treatment period by the same testers. The instruments used were again the scale of creeping and crawling ability, the KDK group adaptation of the Oseretsky, and Form A of the PPVT.

Limitations

Restrictions are imposed upon attempts to apply the findings of this study to contexts differing from the one reported. Neither a random sampling of the population nor randomized assignment of children to groups was accomplished. The extent to which and to whom the results can be generalized is, therefore, affected to an unknown degree. Also, since there was only one teacher and an aide supervising each group, the extent to which differential teaching effects entered into the findings is unknown.

Discussion

A Mann-Whitney U test performed on the creeping and crawling gain scores between groups revealed that the experimental group had improved significantly more than the control group. Thus, the results from hypothesis I supported a very basic assumption of the Doman-Delacato position, i.e., that creeping and crawling performance improves through participation in creeping and crawling activities. This serves as an important control for the effectiveness of the experimental procedures.

A Mann-Whitney U test performed on the motor development gain scores between groups revealed that there were no significant differences between groups, although both gained significantly with respect to their pretest scores. These results from hypothesis II did not support an explicit contention of the Doman-Delacato position, i.e., that recapitulation of early perceptual motor developmental sequences is prerequisite to the performance of more sophisticated perceptual motor skills that are not practiced. In addition, the data provided are not conclusive for accepting motor improvement as a singular results of either treatment, as observed gains in both groups on the KDK scores could be attributable to maturation or the effects of testing. Caution should be exercised in interpreting results from hypothesis III which tended to support the Doman-Delacato theoretical position. An analysis of covariance, using pretest PPVT scores as the covariant, was performed on posttest PPVT scores and yielded significant gains in favor of the experimental group. Covariance analysis, however does not alter the indication that both samples represented different populations. Therefore, the significance of the gains exhibited by the E group on the PPVT is affected by the degree that covariance analysis is inferior to randomization and the unknown extent to which the improvement may have been due to uncontrolled factors associated with initial group differences.

The three hypotheses were chosen to test the Doman-Delacato Theory of neurological organization as it applies to trainable mentally retarded children. Some basic assumptions of the theory were supported and the experimental treatment appeared to have a facilitating effect upon the intellectual development of the children in the E group. However, the uncontrolled factors that could have accounted for the PPVT gains necessitates discretion in interpreting these findings. The fact that there was only one teacher in each treatment suggests that factors such as amount of task directed acitivity, amount of exposure to vocabulary and teacher enthusiasm may have been operating differentially in the two groups. The groups were not described in specific terms, therefore unaccountable factors associated with initial group differences may have been present.

Within the stated limitations, these findings suggest that the procedures may prove beneficial in application with retarded children in public schools. On the other hand, the lack of significance between groups in motor development and the motor improvement exhibited by the control group questions the validity of the Doman-Delacato contention that ontogenetic development consists of an invariant sequence of stages and that proficient motor functioning at higher levels is dependent upon successful completion of lower levels.

The principal investigator was unable to find any similar experimental investigations in the literature. The small sample and limitations in research design necessitate caution in deriving valid inferences from these findings but clearly point up the need for larger scale investigations along similar lines.

ABSTRACT

SEGREGATION AND ITS ISSUES

by

Oliver L. Hurley

The case is presented for the centralized day school, as contrasted with dispersed special classes. It is contended that the day school can better enhance the effectiveness of the teacher pupil transaction through improved opportunities for communication between teachers, between teachers and psychologists, and between teachers and supervisors; for articulation of the program and its content; and for instructional grouping according to relevant educational dimensions.

PROBLEMS OF SEX EDUCATION FOR THE EDUCABLE MENTAL RETARDATE IN THE DAY SCHOOL

by

Sadie M. Douglass

Although there has been very little literature concerning sex education programs for mental retardates, there are hopeful signs of awareness of this neglect and positive steps in progress toward its correction. Dr. Julian V. Stein, Director of the Project on Recreation and Fitness for the Mentally Retarded, and The Sex Information and Education Council for the United States are cooperating in an effort to deal with the problems of teaching sex education for the mentally retarded. Their plan of operation may be of value to those who may wish to begin a prompt course of action on the problem at the community or school level. These organizations have already set into motion the following steps:

1. The collection of information and materials from those individuals or departments who have already become involved in sex education for the mentally retarded

2. The appointment of a task force or a committe to review, evaluate and make recommendations relative to the above mentioned data

3. The development of pamphlets, books, unit guides, and audiovisual materials

4. A plan to use the materials developed--on an experimental basis--with mental retardates of various ages and functional levels, and in a variety of environmental settings.

After almost ten years of study and evaluation of existing sex education courses, the Baltimore City Public Schools released a tentative guide in sex education for children in Kindergarten through 12th grade in September 1967. Currently, the program is being implemented in the sixth grade. Mental retardates on the intermediate level are included in this trial run.

The entire Kindergarten through 12th grade program has as its objectives the development of three basic concepts, namely:

1. Family living influences one's attitudes, values, and behavior.

2. Growth and development is a personal, unique, and a natural life process.

3. Successful living requires sound personal and social relationships.

The junior high program will be phased into the various academic subject areas next fall. This course of action is contrary to the thinking of veteran pioneers such as Dr. Mary Calderone who believes that family life education should be taught as a separate entity. The fact that incomplete coverage will result from the plan of operation chosen for the junior high level means that each junior high school will have the responsibility of planning a short supplementary unit of study adapted to the needs peculiar to its community setting.

Preparation for this step will begin in May with a five day workshop. Two to four representatives from each junior high school will participate. Subsequently, these persons will assist the principal in organizing the supplementary unit.

Workshop enrollees will be exposed to the following topics in the five sessions:

1. Purpose of the workshop
   Why family life education is needed
   Community readiness

2. Adolescent growth patterns
   External and internal changes in boys and girls
   Human reproduction and the birth process

3. Understanding emotional change
   Dating, going steady, and dating standards

4. Preview of films

5. Guidelines in planning family life education
   Small group discussions of possible units of study.

Mrs. Koma Stinchcomb, former supervisor of Junior High Special Curriculum,and I worked with the committee whose efforts made the accomplishment just referred to come to fruition. However, under Mrs. Stinchcomb's direction and with the help of the four specialists comprising our Junior High Special Curriculum Supervisory staff, a unit on family life education for mentally retarded adolescents was completed about six years prior to the publication of the Kindergarten through 12th grade guides for regular grades. At that time, it was reviewed and received noteworthy acclaim. Nevertheless, permission for its use was not granted until this year and even now, permission is limited. The reasons for this situation will become apparent as we discuss other aspects of the total problem. The concern is great because of the delay. It is important to help those eighth and ninth grades who may leave school before they receive any help with the problems they face in their sexual adjustment. In the words of Hutt and Gibby (1958) the seriousness of the situation really comes alive: "If the period of puberty is described as a period of 'storm and stress' for the child of average intelligence...Then it could well be termed a typhoon of cataclysmic proportions for the retarded child, particularly the one who lacks guidance (p. 185)."

Factors Affecting the Need for Sex Eduation

The whole situation has become crucial for the majority of our youth today, retarded and nonretarded alike. Society has condoned the erotic connotations of every conceivable commodity on the market. Sexual situations, once considered immoral, flood T.V., movie screens, and the live drama of the theater. The law has trouble controlling the output of pornographic pictures and books which circulate throughout our schools. The accounts of broken homes among public figures have affected the importance once attached to the disastrous effects of broken homes upon our youth. The educational lag in sex education has failed to bridge the gap for youth as society has outgrown the restrictions of the Puritan Age and moved into permissiveness of the "Age of Liberation," which is characterized by the prevalence of increased premarital pregnancies, homosexuality, and rising statistics in cases of venereal disease and drug usage and addiction.

It is thought that some of these current behavior patterns, once attributable in large measure to children of the most disadvantaged classes in our society, have invaded middle and upper class society to a great extent.

Marked changes in the behavioral patterns of youth have forged the first link in the chain of circumstances which have made sex education of vital concern to all educators. These changes have been instrumental in altering our entire concept of sex education. In the not too distant past, sex education was quite uncomplicated; it merely meant explaining menstruation and human reproduction. Consider these quotes which now conceptualize sex education:

1. It is sexuality, not sex, that is crucial. Human sexuality is what is important...Sexual identity is an important part of the self-image and

> affects every aspect of life. For example, sexuality involves the name we are given at birth, the toys we play with as a child, the clothes we wear, the friends we have, the courses we take in school, the careers we choose, the things we like to do, the way we see our roles and responsibilities in our homes, and last but not least, the ways we...cope with our sexual needs and urges as responsible and committed human beings... sexuality refers to human relationships and interrelationships between the sexes. It involves an examination of men's roles and women's roles in society and how they relate and react to supplement each other; the responsibilities of each toward the other throughout life; and the development of sexual power as a creative and recreative force (Schiller, 1968, pp. 17-19).

2. The main purpose of sex education is to help young people understand what masculinity is to boys and men, femininity is to girls and women... If properly taught, it does not dwell so much on the facts of reproduction as it does upon the development of informed and rational attitudes toward sexuality (Hindricks and Kaplan, 1967, p. 67).

Sexuality, attitudes, responsibility, and morality are the terms emerging from these definitions which challenge the special educator to a far greater degree than others. They represent the abstractions which mental retardates have limited ability to internalize. Can we hope to develop in these children the understanding that restraint in yielding to immediate sexual impulse will bring future rewards, and, conversely, that lack of restraint brings unhappiness and places undue burdens upon the family and society at large? Can we teach them to react responsibly to sex impulses? In addition, we face the inescapable fact that the majority of our children come from the most disadvantaged classes of society with mores and customs in some cases widely divergent from those which middle class schools strive to impose. This makes the task of the school even more difficult, for, over and above the general characteristics of the lower classes of society, are specific differences in sexual behavior typical of the various family structures represented within these classes. Since culture impinges upon its offspring at birth, it appears necessary that we have more intimate information about the practices and processes of child care and socialization, the patterns of premarital sex, and types of family disorganization in migrant, immigrant, mountaineer, white, and nonwhite family units. Surely, this information is of great import as we explore approaches, methods of instruction, and achievable goals.

Thus far, the following problems have been implied:

1. The paucity of appropriate information regarding sex education for the mentally retarded

2. The need to internalize a broader concept of sex education as a basis for curriculum design

3. The climate of sexual permissiveness that has affected our youth to an extent that will challenge the best efforts of educators

4. The need for more knowledge of family mores and customs to determine our approach to the problem of sex education in terms of meeting individual needs.

Sex Education Problems

Finally, let us examine some information about sex education problems for the nonretarded which may be applicable to this discussion. It is generally agreed upon that securing the involvement of parents in such a program is a problem of prime importance and their active participation should continue for the duration of the program. Their activities would include discussion and study groups, previewing books and audiovisual aids, investigating community resources, etc.

Of equal importance is the teacher. The most definitive standards for the identification of the right person into whose hands the sex education program may be placed have been described by Miss Doris E. Terry (1968):

> The teacher must have a broad-based knowledge of sex mores including the historical and linguistic perspectives which have had so much influence on our society.
>
> The teacher must be comfortable with his or her own sexuality.
>
> The teacher must know and understand the psychosexual pattern of human beings and the significant influence this has on the development of a healthy sexuality.
>
> The teacher must be comfortable with the language of sex and be able to use it purposefully.
>
> The teacher should be aware of changing times and alert to significant changes in attitudes about sex (p. 4).

Out of 250 teacher training institutions, only 21 offer courses to prepare teachers to teach sex education and of the remaining 229, only six have plans to offer courses in the future. It thus becomes evident that teacher training adds another problem in the implementation of programs in sex education.

Fortunately, the subject matter content of a program in sex education does not present a major problem. Many guidelines are available, and there are similar elements in each. A typical Kindergarten through 12th grade program may be:

1. Kindergarten -- teaching children how they grow

2. Primary grades -- learning and using correct names for the sex organs; learning about reproduction; the need to love and care for babies; learning how to help at home

3. Grades four through six -- teaching children about body changes during puberty and adolescence, including menstruation and masturbation

4. Junior and Senior High -- learning how to deal with family relationship; getting a deeper understanding of the reproductive system and the importance of prenatal care; courtship and engagement as preparation for marriage; homosexuality and other generally unaccepted sex practices.

Of course, in planning good programs in sex education, the wide difference in individual rates of growth, maturity, and comprehension levels must be provided for. This means provisions for review and reinforcement of previously introduced information before presenting the materials prescribed for a given grade or level designation.

Finally, the administration of programs is a controversial issue. Some advocate that the subject be taught peripherally as a part of social studies, science, etc. Dr. Mary Calderone, whose comprehensive study of this entire area is well known, believes that sex education should be taught as a separate entity handled by the most qualified persons who can be secured.

In conclusion, may I share with you the thinking of Patricia Schiller (1968):

> Children in special education classes and schools should be involved (in sex education programs) as well as those in regular classes. A principal pointed out this need recently when he reported the pregnancy of a 14-year old special education student who is confined to a wheel chair. She had never received sex education at home or at school (p. 19).

Obviously, the need is critical, and urgent. How rapidly can we move to meet its demand?

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ABSTRACT

HELPING PARENTS THROUGH INDIVIDUAL CONFERENCES AND WRITTEN REPORTS

by

Sister M. Evodia

Because the very fact of retardation creates a crisis in a family, the teacher of mentally retarded children finds herself being required to deal not only with the ordinary questions pertaining to progress and behavior, but also with problems concerning parental adjustment to, and acceptance of, the handicap.

Parental reaction to retardation appears to fall into three chief categories: (a) the parents admit the retardation and accept the child, (b) they seek a scapegoat upon whom to lay the blame, or (c) they deny the retardation. The special class teacher then must have, in addition to her professional readiness to teach the retarded, a sincere appreciation of the problems engendered by the presence of a retarded child in a family and, although she is not expected to take on the role of a counselor, she must develop a willingness to be consulted when a problem centers around the child. She is the parents' most active partner in the development of the child.

RESEARCH

AN INPUT OUTPUT APPROACH TO PSYCHODIAGNOSIS OF CHILDREN

by

Luciano L'Abate

Existing traditional psychodiagnostic models suffer from at least seven distinct shortcomings:

1. Lack of explicit formulation

2. Fragmentary and arbitrary modes of thought in which no one approach is sufficient to handle all aspects of psychodiagnosis

3. Borrowing from a variety of theories either on *ad hoc* or a *post facto* basis

4. Insufficiency in linking practice to theory or allowing theory to govern practice (For instance, which model can tell us how to select tests, how to construct a battery, and how to interpret responses and results?)

5. Separation and alientation from the science and profession of psychology, because this activity is low in prestige value and most psychologists have abandoned it for other seemingly more exciting activities (research, teaching, psychotherapy, behavior modification, etc.)

6. Unsatisfactory, gross, and undifferentiated psychodiagnostic practices based on few and not always true instruments such as: Wechsler Intelligence Scale for Children (WISC), Draw-A-Person (DAP), Thematic Apperception Test (TAT), Bender-Gestalt, Rorschach, with little concern for the different, rather than lower, skills of deprived and minority group children

7. The expressive aspects of functioning emphasized without attention being paid to what a child receives. He is judged only in terms of what he says or does.

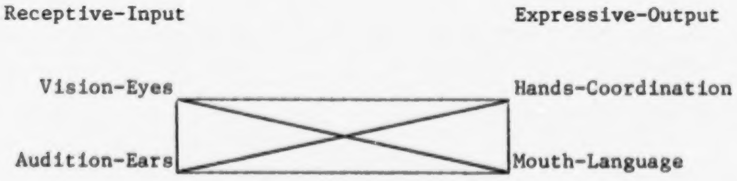
This final shortcoming is probably one of the most deleterious practices in the evaluation of exceptional children because it fails to acknowledge a basic, important aspect of psychological functioning--reception.

To obviate the latter, and possibly to correct some of the other shortcomings, the model in Table 1 is presented. It is based on the following assumptions: Input is operationally defined as that aspect of functioning in which the child omits or responds with a discreet, short (both spatially and temporally) response dichotomy (yes or no, black or white, true or false) or multiple choice (one out of 3 or 4 at the most). Output, on the other hand, is defined as a chain of interconnected responses, either verbal or motor, leading to a solution. Thus, the length and width of the response, both spatially and temporally, is longer and more complex, like a sentence, a thought, a manipulation of various objects as in the performance part of the WISC (with the exception of Picture Completion, which by the present standards would qualify as a test of input). We also assume for the present purposes that this model applies to children older than three years and that two major input (eyes and ears) and two major output (hands and mouth) are involved, as shown in Table 1.

Table 1

The Input Output Approach in Psychodiagnosis of Children:
Fundamental Assumptions and Basic Deductions

The Model



Expected Patterns

A. Normality: Reception ≥ Expression (Input ≥ Output)

B. Dysfunctions possible: Reception ≠ Expression

    1. Vision > Audition = Coordination > Language

    2. Vision < Audition = Language Coordination

    3. Vision = Audition ≶ Verbal ≠ Coordination

    4. Vision ≠ Audition ≸ Verbal = Coordination

Intervening Variables

A. Cerebral dysfunctions

    1. Lawful variability of indices

    2. Consistency of patterns

B. Psychopathology

    1. Random variability of indices

    2. Inconsistency of patterns

        (except for conflict areas)

Once both assumptions are made, the three major derivations are as follows: (a) in most normal children, reception is always greater than or at least equal to expression; (b) if audition is greater than vision, speech is greater than manual manipulation; (c) by the same token, if vision is greater than audition, manual manipulation is greater than speech.

Once we have this model, what do we obtain? In the first place, we need to recognize that children with some degree of brain damage should show more consistent and less variable patterns than emotionally disturbed children, whose mainstay would be inconsistent variability of patterns and indices. In the second place, in terms of sexual differences, it is possible that toward the early preschool years, boys may be higher on visual input and on motor output than girls, who, would be higher on auditory input and on verbal output than boys. In the third place, diagnostically, socially deprived children may be higher on input than on output functions, while some types of brain damage, on the other hand, may affect input functions to a greater extent than output. Except for a greater variability of indices, emotionally disturbed children should not differ on input output functions from normal children. This prediction, however, should be qualified for type and degree of psychopathology. Autistic children, for instance, should show an input smaller than output, if their reactivity to the environmental stimulation is restricted, rigid, and selective. Their preferred mode of motor output, inferred by their unusual interests in objects, should be superior to verbal output. Schizophrenic children, if testable, on the other hand, might show an input higher than output because of their extreme overreactivity to environmental stimulation. Their relative output would be mostly verbal rather than motor as shown in Table 2.

Table 2

Hypothetical Diagnostic Classification of Children
According to an Input Output Approach

	Tentative Summary			
	Input		Output	
Diagnostic Group	Auditory	Visual	Verbal	Manual
Sex Differences*	Boys < Girls	Boys > Girls	Boys < Girls	Boys > Girls
Normals	Average	Average	Average	Average
Superior	Above Average	Above Average	Above Average	Above Average
Defectives	Low	Low	Low	Low
Emotionally Disturbed	Variable	Variable	Variable	Variable
Brain Damaged	Low**	Low	Near Average	Near Average
Culturally Deprived	Below Average	Near Average	Low to very Low	Low to Below Average
Aggressive	Average	Average	Below Average	High to Above Average
Autistic	Low	High	Very Low	High Average
Schizophrenic	High Variable	Low	High	Low

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*Depending also on age.
**Depending on type of brain damage.

Mental deficiency would be described in terms of near equality and stability in receptive expressive functions. It would be differentiated from mental deficiency with brain damage in terms of smaller variability and specificity of functions and higher input. Aggressive children would show a superiority of output over input functions, especially in the motor area. In contrast to brain damaged children, their input functions should approach normality while the relationship between auditory input and verbal output would go in the opposite direction, auditory input near average, verbal output lower, visual input average, motor output above average, or higher than any other function.

From the viewpoint of test selection, this model allows first of all a classification of tests according to their position on the four major combinations of input output functions and both input channels. For instance, the Peabody Picture Vocabulary Test (PPVT) is based on both input channels but the output can be either verbal or manual (by pointing). Certainly this test is more weighted on input than, let's say, the WISC. The DAP uses auditory input (the instructions) and hand output. The TAT and Rorschach receive both auditory instructions but mostly visual information and would be classified as tests of verbal output. The Bender-Gestalt and similar figure reproduction tests would be tests of motor output. The Columbia Mental Maturity Test (CMMT) instead would be a test of visual input, just like the Raven Progressive Matrices. An example of this classification is shown in Table 3.

Table 3

Tentative Classification of Selected Children's Tests
According to an Input Output Approach

Major Input Channels	Major Output Channels	
Eyes	Hands	Mouth
Columbia Mental Maturity Test (CMMT) Organic Integrity Test (OIT) Perceptual Maturity Scale (PMS) Illinois Test of Psycholinguistic Abilities (ITPA) - Visual Decoding Raven's Progressive Matrices	Wide Range Achievement Test (WRAT): Spelling and Arithmetic ITPA: Motor Encoding Missouri Children's Picture Series (MCPS) Retention and reproduction tests* Color Pyramid Test (CPT)	WRAT: Reading Rorschach Thematic Pictures (TAT, Michigan, CAT, Symonds) Gray Oral Paragraphs
Ears	Hands	Mouth
ITPA: Auditory Decoding Auditory Discrimination tests	Right Left Discriminations	WISC: Verbal Scale

Eyes and Ears	Hands	Mouth
Peabody Picture Vocabulary Test (PPVT) and other picture vocabularies (Ammons Full Range Vocabulary Test and others)	Draw A Picture (DAP)	KTSA: Numerical Element (NE) and Symbol Pattern
WISC: Picture Completion (PC)	Frostig: Scales I, II, III, V	
	WISC: Performance Scale (except Picture Completion)	
	Kahn Test of Symbol Arrangement (KTSA): Objective Measures	
	Santostefano's Performance Tests of Personality	

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*Bender-Gestalt; Benton's Revised Visual Retention; Grahm-Kendall Memory for Designs; Minnesota Percepto-Diagnostic.

This classification suggests also some rules for battery construction provided we assume four major areas of functioning: (a) the intellectual auditory verbal, (b) the intellectual visual motor, (c) the educational, and (d) the emotional. From these combinations we can derive a long list of input output ratios based on tests, like in Table 4.

Table 4

Possible Intertest Comparisons among Dependent Variables
in Psychodiagnosis of Children
According to an Input Output Approach

A. Within Intellectual Measures
   1. PPVT IQ/WISC-Voc IQ = Input/Output
   2. CMMT IQ/DAP IQ = Eyes/Eyes Hands
   3. WISC C/WISC PA = Ears Mouth/Eyes Hands
   4. DAP IQ/WISC-Perf. IQ = Eyes Hands/Eyes Hands
   5. DAP IQ/WISC-OA IQ = Eyes Hands/Eyes Hands
B. Within Educational Measures
   1. WRAT - Reading Recognition/Gray - Oral Comprehension - Eyes Mouth/Eyes Mouth
   2. Gray - Oral Comprehension/Gray - Writing - Eyes Mouth/Eyes Hands
   3. Writing from Dictation/Writing from Sight - Ears Hands/Eyes Hands

C. Between Intellectual and Educational Measures
    1. WRAT/WISC = Achievement Level/WISC Full IQ
        a. Reading/Verbal
        b. Reading/Perf.
        c. Spelling/Verbal
        d. Spelling/Perf.
        e. Arith/Verbal
        f. Arith/Perf.
        g. WRAT-A/WISC-A
    2. ITPA/WRAT
D. Within Sensory Motor Functions
    1. Input Measures Alone
        a. PMT/OIT
        b. PMT/ITPA-Visual Decoding
        c. OIT/ITPA-Visual Decoding
    2. Input/Output Measures
        a. OIT or PMT/Frostig IV
        b. OIT or PMT/Frostig I, II, III, V
        c. Frostig IV/Frostig I, II, III, V
        d. ITPA Decoding/ITPA Encoding
        e. Right Left Discrimination/ITPA Decoding and Encoding
        f. Right Left Discrimination and Benton RVRT Right-Left Scores
E. Between Sensory Motor Functions and Intellectual Functioning
    1. OIT or PMT/WISC Performance
    2. OIT or PMT/WISC-PC
    3. Frostig PQ/WISC Performance-IQ
    4. Frostig PQ/DAP-IQ
    5. Right Left Discrimination/WISC Verbal and Performance IQ's
F. Within Personality Measures

1. Rorschach/CPT = Eyes Mouth/Eyes Hands
2. Rorschach/KTSA-NE = Eyes Mouth/Eyes Hands Mouth
3. KTSA - Objective Measures/CPT = Eyes Ears Hands/Eyes Hands
4. Santostefano Performance Tests/MCPS = Eyes Mouth/Eyes Hands
5. Rorschach/MCPS = Eyes Mouth/Eyes Hands
6. Rorschach Form Level/MCPS-Conformity
7. Rorschach-Aggression/MCPS-Aggression

G. Between Intellectual Functioning and Personality Measures

1. DAP/Rorschach (scored for body image)
2. WISC-OA/Rorschach (scored for body image)
3. WISC-PC/Rorschach (mode of approach)
4. WISC Verbal Content/Rorschach
5. WISC-IQ/Rorschach Rs
6. DAP - same sexed figure drawn first/MCPS-MF
7. WISC-Verbal/WISC-Performance - Rorschach/CPT
8. WISC-Verbal/WISC-Performance = KTSA-NE/KTSA objective measures

H. Between Educational Personality Measures

1. WRAT/Rorschach
2. WRAT/CPT
3. WRAT/KTSA
4. WRAT/MCPA
    a. Reading-Withdrawal
    b. Arithmetic - MF
    c. Spelling-Conformism

The major empirical but not unsurmountable shortcoming in the application of this type of analysis to visual motor functions and emotional adjustment is the lack of age selected norms, which however are available in few tests of recent vintage like the Frostig and Illinois Test of Psycholinguistic Abilities (ITPA). Were we to have valid age selected norms for the Rorschach or other projective techniques, we could compare output from these tests with the output on other tests of personality and intellectual functioning.

The major issue that this proposal would naturally meet is its validity. How valid is this model, before accepting, even provisionally, its potential clinical and diagnostic validity? This model has lead to the following empirical verifications which will be briefly summarized. More detailed descriptions of these studies will be presented elsewhere (L'Abate, M.S. in preparation).

Study 1. We used three samples of children from pediatric ($N = 56$), neurological ($N = 41$), and psychiatric ($N = 41$) settings. In the first sample, Ammons Full Range Picture Vocabulary Test (FRPVT) was used as a measure of input. For the other two samples, the PPVT was used. Output was measured by extrapolating the Wechsler Intelligence Scale for Children (WISC) Vocabulary subtest to an IQ score. A difference score was obtained by subtracting the WISC Vocabulary IQ score from the PPVT IQ score. These different scores were our independent variables. Dependent variables were educational quotients from the WRAT for Reading, Spelling, and Arithmetic. In the first two samples whenever the FRPVT or PPVT scores were significantly higher (within one S D from the mean) or lower than the WISC Vocabulary IQ scores, the educational achievement in reading, spelling and arithmetic was lower. Whenever FRPVT or PPVT IQ scores were approximately equal to the WISC IQ scores, educational achievement was higher. This relationship was true in the first two samples for children of dull normal intelligence. In the psychiatric sample where the intelligence level was average, educational achievement was best predicted from WISC IQ scores than the PPVT. Output in samples of average intelligence would seem to be influenced by diagnosis, central dysfunctions or emotional disturbances.

The results of this initial study were sufficiently encouraging to investigate (*Study 2*) the role of sex differences in input output functions. However, in this pilot study the results were negative. We plan to continue this analysis with a greater number of children.

Study 3. This study was conducted to evaluate Tien's Organic Integrity Test (OIT) as a measure of visual input in its relationship to various measures of output (WISC Verbal & Performance IQs, WISC Performance subtests, DAP, Benton & MPDT). Since the OIT was found to correlate significantly only with age ($r = .55$, $p > 105$) an analysis similar to that of the first study was conducted.

Two groups of children were separated on the basis of discrepancy scores between the OIT Perceptual Quotient and the DAP IQ scores. In one group the OIT PQ was higher than the DAP and in the other group lower. The WISC Verbal, Performance, and Full IQ scores were the dependent variables. In the PQ DAP group the intellectual level was consistently borderline. In the OIT DAP, WISC Verbal and Full IQ scores tended to fall in the dull normal range. The differences between these two groups were statistically significant ($p > .05$).

Study 4. The purpose of this study was to explore the relationship between visual input and motor output and vocabulary development in relatively normal boys and girls using group screening procedures. Visual input was measured through Raven's Progressive Matrices. Motor output was measured by reproduction of Benton's Revised Visual Retention Test (Form C) presented on a screen with a lantern slide projection with a 10 second period of presentation. Verbal output was measured by the Stanford-Binet Vocabulary administered in a written form in mimeo sheets. Considerable sex differences were found but as a whole vocabulary was more significantly related to the Raven than to the Benton, suggesting the importance of visual input in vocabulary development, for instance, reading.

Study 5. The purpose of this study was to test van der Castle Perceptual Maturity and the CMMS as measures of visual output in their relationship to academic functioning and verbal and nonverbal intelligence as measured by the CMMS. Subjects were children from two public grammar schools in Atlanta. The two scales of visual input were unrelated to each other while the CMMS was correlated more highly with the nonverbal part of the California ($r = .55$, $p > .01$) than the verbal ($r = .35$, $p > .05$). Neither measures of input, however, correlated in any way to educational achievement as measured by the Weekly Silent Reader and Reading Readiness Tests.

Study 6. In this study we evaluated the ITPA's auditory and visual input measures in relationship to other measures of output (WISC, DAP, Frostig, and WRAT). As a whole we found that the ITPA auditory decoding was significantly related more to verbal output measures ($r = .63$, $p > .01$) than to output ($r = .47$), supporting the first deduction of our original model. The second deduction concerning visual input and motor output remained unsupported since visual input seemed equally related to either verbal and motor output. Some sex differences in this were found. In at least one other study we did find that visual input, as assessed by the CMMS (Hosford & L'Abate) was significantly lower (in the 70's) than measures of output (WISC IQ's within average limits) in children with learning deficits and possible neurological impairment.

Studies now in progress are concerned with the roles of ethnic origin and socioeconomic factors on receptive expressive functions, suggesting the probability that receptive functions may be more related to physiological factors while expressive factors are more dependent on age and on socioeconomic background (L'Abate, research in progress).

Further research of course will indicate the validity of this model whose main advantage lies in its testability. In conclusion it seems preferable to test deductions and find that they may be wrong rather than not test and assume that one is always right. Besides the advantage of testability, this model permits us to relate psychodiagnosis to empirical literature and to information theory broadly defined. However, the ultimate test of its usefulness will lie in its application to rehabilitation, indicating a greater degree of differentiation in rehabilitative procedures than it has been possible traditionally.

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ABSTRACT

TESTING ATTITUDES TOWARD PHYSICAL HANDICAP, STEREOTYPING AND OBJECTIVITY IN A PARTIALLY INTEGRATED ELEMENTARY PROGRAM

by

Eugenia G. Baker

Problem

With the growing interest in placing special classes for the physically handicapped on the regular school campus, there is need for study of other children's attitudes toward handicapped children.

In order to do this, new instruments to measure children's attitudes were developed. These needed to be sensitive to depth attitudes, appropriate for the school situation, and have school relevant content.

In this study, selected concepts relating to attitudes toward physically handicapped were empirically examined. The cripple stereotype was defined in terms of children's behavioral responses to the social stimulus of a physically handicapped child.

Method

The two especially designed tests, the Film Test and the Semantic Differential, were administered to 168 elementary school children in the fourth, fifth, and sixth grades. Some of the children from the special class for physically handicapped located in this school participated in regular class activities on a parttime basis. Factor analysis of the Semantic Differential data was used to test hypotheses relating to the differential modes of person perception employed by the nonhandicapped subjects in viewing self, peers, and handicapped children.

The Film Test presented contrasting peer group interactions. The Part I portrayal of a handicapped child followed the negative cripple stereotype. Student's responses were classified by judges as stereotyped, objective, and unscorable. The effect of sex, grade, and Film Test categories on Semantic Differential scores was assessed by a multiple discriminant function analysis.

Results and Conclusions

The factor analysis of the Semantic Differential data supported the existence of mildly favorable stereotype of the cripple. Two factors, "Dynamic Affect" and "Conventional Virtues" were identified. The first is associated with peer and self perception, the second with perception of the handicapped. The relationship of these factors with the factor dimensions identified by Osgood is discussed. The nature of this positive attitude which characterizes the popular stereotype of the handicapped was supported by the patterning of the Semantic Differential scales and the factor loadings.

The number of children who viewed the physically handicapped child objectively was greatest in the fourth grade, and significantly less in the fifth and sixth grades. Stereotyping increased as the grade level became higher, but the greatest increase was found in the unscorable category.

Both the Semantic Differential and the Film Test elicited attitudes toward the child with deviant physique which describe him as immobile, passive and dependent. Such attitudes appeared to based upon preconceptions, which tended to restrict objective observation.

These findings suggest that the period between the fourth and sixth grades may be critical for attitude modification. Two implications may be drawn: (a) effective integration should be started in the elementary school, and (b) younger children typically have more objective attitudes, suggesting that integration should be started as early as possible.

ABSTRACT

THE INFLUENCE OF CORTICAL AND SUBCORTICAL LESIONS ON THE MEDIATION OF SUSTAINED ATTENTION IN CHILDREN

by

Peter A. Campanelli

This study investigated the effects of cortical and subcortical lesions on sustained attention in children in convulsive disorders. The samples of children used in this study were normal children and two groups of brain damaged children, the latter groups classified as having either focal or nonfocal lesions of the brain manifested on electroencephalographic (EEG) recordings.

The total sample consisted of 60 children, ranging in chronological age from eight to 12 years. These subjects were categorized into three groups of 20 each as follows: (a) normal children who were not brain damaged, (b) focal children with convulsive disorders who were brain damaged and had EEG tracings displaying focal discharges, presumably cortical in origin and, (c) nonfocal children with convulsive disorders who were also brain damaged but had EEG records displaying diffuse hypersynchrony, presumably subcortical in origin.

Each subject used in this study demonstrated the following: normal near point vision, an intelligence quotient of 90 or better, academic grade placement appropriate for the life age, and reading level commensurate with academic grade placement. The brain damaged groups also presented a recent EEG record classified as abnormal focal or abnormal nonfocal in character.

The Continuous Performance Test (CPT) was employed as the instrument of choice to measure the sustained attention of each subject under these three conditions of room illumination: Condition 1 (ten foot candles), Condition 2 (zero foot candles), Condition 3 (ten foot candles, repeated). All subjects were tested for equal periods of four minutes each under the three illumination conditions, providing absolute (omission errors) and relative (commission errors) percentage scores for analyses.

Analysis of the results revealed no significant differences ($\alpha = .05$) between the mean values of each of the three groups relative to chronological

age, mental age, intelligence level, academic grade standing, reading level, and near point vision.

Significant differences were found between the three groups of children concerning absolute and relative scores on the CPT within and between illumination conditions. Quantitative differences were demonstrated between the normal children and the two brain damaged groups on the CPT for the three illumination conditions. More important, under the condition of minimal illumination (zero foot candles), the brain injured children with nonfocal lesions performed significantly poorer than the normal group and their brain damaged counterparts with focal lesions.

This latter finding suggests that children with cortical and subcortical lesions are affected differently when neurophysiological stress is enhanced under minimal levels of illumination during a task of sustained attention. The results support other investigators concerning the effects of specific site of lesion on sustained attention in brain damaged children when measured by the CPT.

ABSTRACT

INFLUENCES OF AN ADVANCE ORGANIZER ON LEARNING AND RETENTION OF MEANINGFUL VERBAL MATERIALS FOR EDUCABLE MENTALLY RETARDED AND INTELLECTUALLY NORMAL CHILDREN

by

John T. Neisworth, Robert M. Smith, and Stanley L. Deno

Purpose

The present study was designed to compare the effects and evaluate the effectiveness of a brief experimental passage presented to educable mentally retarded (EMR) and intellectually normal students prior to their reading of subsequent detailed learning material. The experimental introductory passage, an "advance organizer," was constructed from considerations derived from D.P. Ausubel's subsumption theory.

Subjects

Subjects consisted of 194 high school age EMR and 184 elementary school age intellectually normal children. Both groups had approximately the same mean mental age (ten years).

Procedure

Four instruments were devised for the study: an objectively scored achievement test, a learning passage, a control introductory passage, and an advance organizer. The materials dealt with the topic of acoustics and the nature of sound.

The advance organizer was theoretically designed to provide the experimental subjects with a number of concepts to "subsume" (organize and include) the more specific content of the subsequently presented learning material. The control introduction was written to provoke interest in the learning topic and did not meet the criteria for an organizer. All materials were written at the third grade reading level which was at or below the tested level of all subjects in the study. A replicated posttest only control group design was employed. Within each EMR and normal classroom, subjects were randomly assigned to organizer and control introductory treatments. There were, then, essentially two studies conducted: one employing EMR subjects with an experimental advance organizer and a control group, and one employing intellectually normal subjects. Children in both studies were of comparable reading and mental ages to make interstudy comparisons possible. All subjects took the same achievement test based on the learning material. This test was also administered two weeks later as a measure of retention.

Results

The statistical analyses of EMR performances yielded:

1. On initial achievement and retention testing, no significant difference ($P > .05$) between organizer vs. control group means

2. No significant difference between initial vs retention test means of organizer or control groups.

Similar analyses of intellectually normal performances yielded:

1. On initial achievement _and_ retention testing, a significant ($P < .006$) difference between organizer (the greater) vs. control group means

2. No significant difference between initial vs. retention test means of organizer or control groups.

Conclusion

The finding that the organizer strategy did facilitate learning and retention for the normal but not for the EMR children, coupled with the comparability of both groups' reading and mental age means, suggests that the utility of organizers with children may be contingent on competencies not highly correlated with the reading and/or mental age variables. It is suspected, for example, that the instructional history of educable students is antagonistic to the advance organizer approach.

While prior advance organizer research has employed only intellectually normal adults, this is the first study to suggest the efficacy of advance organizers with children of normal intelligence. The study lends support to the findings of other investigations that the organizer strategy, as presently understood, does not facilitate EMR verbal learning.

ABSTRACT

A COMPARATIVE STUDY OF SELECTED EXPRESSED ATTITUDES, CONCEPTS AND INTERESTS OF RETARDED ADOLESCENTS

by

Stanley A. Winters

This is a report of a study dealing with the comparison of several selected expressed attitudes, concepts, and interests of adolescents attending a public school special program for the educable mentally retarded (IQ 50 to 75) with two groups of normal students--one of comparable chronological age and the other of comparable mental age. The major hypotheses were:

1. The pattern of attitudes, concepts and interests of mentally retarded adolescents differs from that of normal adolescents of comparable chronological age.

2. The pattern of attitudes, concepts and interests of mentally retarded adolescents differs from that of normal children of comparable mental age.

3. The pattern of attitudes, concepts and interests of mentally retarded adolescents tends to resemble the pattern of normal children more than the pattern of normal adolescents.

Sixty-six retarded teenagers (IQ 52 to 75) were matched with 66 normal adolescents (IQ 90 to 109) of comparable chronological age upon the bases of sex, race, and socioeconomic level. The retarded students also were matched with 66 normal children (IQ 90 to 109) of comparable mental age upon similar criteria. All of the students were interviewed indivudually by the investigator and asked the questions of a specially adapted Interest Inventory.

The data obtained were placed in categories under each attitude, concept or interest investigated. The chi square technique was used to determine the statistical differences between the responses of the retarded and those of the normal groups.

The findings substantiated two of the hypotheses:

1. The pattern of attitudes, concepts and interests of the mentally retarded adolescents did differ at a statistically significant level from that of normal adolescents of comparable chronological age.

2. The pattern of attitudes, concepts and interests of the mentally retarded adolescents did differ at a statistically significant level from that of normal children of comparable mental age.

The third hypothesis, that the pattern of attitudes, concepts and interests of mentally retarded adolescents resembled that of normal children more than the pattern of chronological agemates was not substantiated, although the finding was in the hypothesized direction.

Other results suggested that the reading level of the mentally retarded did not influence their responses to the questionnaire. The pattern of responses of both the male and female normal teenagers differed from that of the

handicapped teenagers, but only the responses of the boys of the mental agemates varied significantly from the answers of the retarded.

CHILD REARING ATTITUDES OF MOTHERS OF EMOTIONALLY DISTURBED CHILDREN

by

Anthony J. LaPray and Lester N. Downing

Educators in the United States are rapidly approaching the conclusion that they must assume the responsibility for educating not only the bright middle class child, but the blind, the deaf, the crippled, the mentally retarded, and the emotionally disturbed. Public and private groups have recently initiated many experimental studies, demonstration projects, and training programs to bridge the gap between sound mental health principles and typical classroom practice. The problems they face in accomplishing this task are enormous. Bower and Lambert (1961) reported that only ten thousand of the nation's half million severely disturbed children are receiving any type of help for their problem. In addition to these children, there are the children who have affectional, physical, social and adult model deprivations, children who are victims of unrealistic standards and expectations, and those resorting to antisocial forms of life to meet their needs. It has been estimated that one out of every five children in the public school has learning and/or emotional disability (Long, Morse & Newman, 1965).

In 1967, twenty-five special classes designed to meet the educational needs of emotionally disturbed children were established within the public schools of Utah. These twenty-five classes are servicing less than 220 of the approximately 5,600 serious disturbed children of public school age in Utah whose learning is affected to the extent that they are not profiting from regular classroom placement (Utah Special Education Report, 1964). Most school districts with established special classrooms for emotionally disturbed children also employ psychologists, psychiatrists and social workers as consultants to conduct group counseling with the parents of these children.

Most studies in the area of emotional disturbance have dealt with post facto analysis of adults in order to attempt to determine the etiology of their problems. There have been a few good clinical studies of families with emotionally disturbed members who are in contact with child guidance clinics or institutions for the mentally ill. However, evidence in child psychology suggests the child cannot be taught in isolation. If he is to learn to deal with his mental health problems, as well as his educational problems, his family must be involved.

The present study was designed to examine some of the factors that may contribute to the formation of the child's psychological emotional problems. The area singled out for investigation was that of maternal attitudes toward child rearing and family life of mothers who had children that had been diagnosed as emotionally disturbed.

The purpose of the study was to determine whether or not any differences existed between the attitudes toward child rearing and family life of mothers of emotionally disturbed children and mothers of normal children of the same age, living in the same community, and attending the same schools.

As used in this study, the term "emotionally disturbed children" referred to those children identified by the classroom teacher, the school social worker, and the school psychologist as having psychological problems of an emotional nature to the extent that they were unable to profit from education in the regular public school classroom. The term "normal children" as used in this study referred to those children who were attending regular public school classes and had not been diagnosed as emotionally disturbed or intellectually handicapped.

The study had two unique characteristics that distinguished it from previous studies conducted in the area of childhood emotional disturbance and parental attitudes: (a) The study was concerned with children who had been diagnosed as emotionally disturbed, but who in spite of this disturbance were still attending regular classes in the public schools, and (b) The mothers of these emotionally disturbed children had not been informed of the diagnosis of pathology in their children. These two characteristics would indicate that the degree of emotional disturbance of these children was not as great as the subjects used in previous studies.

Method

This study was conducted in the Jordan School District, which comprises about three hundred and fifty square miles of the southern part of Salt Lake County, Utah. It is probably the most heterogeneous area in Utah in terms of the wide variety of people and industries available. There exists a wide variation in the socioeconomic levels of the various residents. It is a mixture of rural and urban communities with agriculture and copper mining being the major industries in the southern and western parts of the district and city commuters of the white and blue collar class making up the majority of the residents living in the northern and eastern areas of the district.

The school population was primarily Caucasion, with less than ten percent Spanish-American, Indian, and Negro children attending the public schools.

The experimental group for this study was composed of 90 mothers of emotionally disturbed children as defined by the school social workers and the school psychologists, who made the diagnosis of emotional disturbance with the use of social histories, psychological tests, interviews with children and interviews with their parents. The children were awaiting placement in special classes for the emotionally disturbed. All children diagnosed as emotionally disturbed were on the elementary level and were between six and 12 years of age. The control group was composed of mothers of children not diagnosed as emotionally disturbed, living in the same geographical area as the experimental group.

The major instrument used was the Parental Attitude Research Instrument (PARI), developed and published by Schaefer and Bell in 1958 as a result of their studies at the National Institute of Mental Health.

The Parental Attitude Research Instrument follows the format of prior scales by Shoben (1949), Mark (1953), and others. It involves the use of rather generalized third person statements about child rearing such as: "Children should be allowed to disagree with their parents if the children feel their own ideas are better," or "There is nothing worse for a young mother than being alone while going through her first experience with a baby." Four response alternatives are permitted: (strongly agree) (agree) (disagree) (strongly disagree).

Although the instrument has not as yet reached the stage of good predictive validity, the majority of the studies in the literature give evidence supporting the concurrent validity of this general approach to the study of parent child relationships, and to the Parental Attitude Research Instrument as a specific tool of research. In addition to the Parental Attitude Research Instrument, a questionnaire was used to obtain information about the mother, her family and her home. The data was analyzed by means of the t test, chi square and analysis of covariance. The .05 level of confidence was maintained throughout the investigation. The analysis of the data revealed some relevant although not marked differences between the experimental and control groups.

The objective in studying maternal attitudes involves the assumption that these attitudes are related to child behavior, and that the attitudes are basic in understanding the etiology of emotional disturbance in children. The results of prior research are mixed. It is evident that attitudes have some effect upon child behavior, but it is also evident that further research is very much needed to deliniate the variables.

The major hypothesis of present research was designed to explore specific maternal attitudes of mothers that did not know that their children had been diagnosed as emotionally disturbed. Based on this premise the following hypothesis was tested:

1. When comparing attitudes toward child rearing and family life of mothers having children diagnosed as emotionally disturbed with a control group of mothers of normal children, no statistially significant differences will be found between the two groups in responses given on the Parental Attitude Research Instrument to statements designed to determine the mothers' attitudes toward:

    a. suppression of sex
    b. comradship and sharing
    c. encouraging verbalization
    d. seclusion of the mother
    e. dependency of the mother
    f. fear of harming the baby
    g. fostering dependency
    h. marital conflict
    i. irritability
    j. excluding outside influences
    k. rejection of the homemaking role
    l. avoidance of communication
    m. ascendancy of the mother
    n. inconsiderateness of the husband.

Ancillary hypotheses that are tested were:

2. No statistically significant differences will be found between the attitudes toward child rearing and family life of mothers who had male emotionally disturbed as opposed to like attitudes of mothers who had female emotionally disturbed children.

3. No statistically significant differences will be found between the occupational level of the families of emotionally disturbed children and the occupational level of the families of normal children.

4. No statistically significant differences will be found between the

educational level of the mothers of emotionally disturbed children and the educational level of mothers of normal children.

5. No statistically significant differences will be found between mothers of emotionally disturbed children and mothers of normal children when compared on the total number of children in their families.

Results

Significant differences and differences that approach significance were found in some of the attitude measures of the Parental Attitude Research Instrument. The most striking difference was that the mothers of emotionally disturbed children differed significantly from the mothers of the normals in their feelings toward their husbands. The mothers of emotionally disturbed children felt that their husbands were inconsiderate of their feelings, actions, and ideas; but no differences existed in the area of marital conflict. In the area of "avoidance of communication" statistical significance was approached. The combination of these three variables could lead to the conclusion that consciously these mothers with emotionally disturbed children felt that their husbands did not care enough about them, or about their children; that the mothers had not only communication problems with the children, but with the husbands as well, but they could not consciously accept this fact. Mothers of the emotionally disturbed children also had a tendency to foster dependency among their children. Could it be that these mothers were attempting to compensate for inadequate marriages?

Significant differences were also found between the attitudes of mothers having male emotionally disturbed children and mothers having female emotionally disturbed children. The mothers having male emotionally disturbed children tended to feel that their husbands were even more inconsiderate than the mothers of the female emotionally disturbed children. In addition, there was a tendency for the mothers of male children to approach the conscious conclusion that they did have marital problems. These mothers may tend to take out the hostility they feel toward their husbands on their male child. If this is true, this displaced hostility could be a powerful factor in the etiology of the male child's pathology.

Other significant differences existed in the size of the family from which the children came. No differences in pathology were found for families with only one child. The greatest percentage of normal children came from families in which there were two or three children, with an increasing percentage of pathology as the number of children in the family unit increased. For this sample of mothers there was a strong indication that the tendency toward large families was accompanied by a tendency toward childhood emotional disturbance. Significant differences were also found between the occupational level of the parents and the incidence of emotional disturbance of their children. The greater incidence of emotional disturbance occurred in children whose parents were in the professions (teachers, social workers, lawyers, physicians, etc.).

The least incidence of emotional disturbance occurred in the children whose parents were in the laboring occupations (mine workers, waitress, construction workers, etc.). The interesting thing about this finding was that logically it would follow that if there was a difference in the occupational levels there should be a difference in the educational level of the two groups. This was not the case; differences in the educational level were not even significant at the .10 level. Popular professional opinion has held that the incidence of emotional disturbance is greater in children from the lower occupational levels. The present study did not bear this out. No real explanation can be drawn from the analysis of the data for this finding.

Discussion

The findings of this study suggest some possible conclusions about maternal attitudes and the etiology of emotional disturbance. The conclusions are probably best stated in the form of questions:

1. Is the child's pathology due in part to the attitudes of the parents toward the child and toward each other, with the mother having definite feelings of hostility toward the father, not being able to accept these feelings at a conscious level, and not being able to communicate well with either the children or the father?

2. Could it be that the professional nature of the father's occupation causes him to obtain satisfaction from his work, while the laboring father obtains this satisfaction from his family?

3. Could it be that the mother compensates for the lack of attention given her by a husband who is "married to his work", by attempting to obtain more love and dependency from her children and by the production of more children to obtain more compensated love?

This research is not predictive in nature, and individual implications cannot be made from it. It is doubtful that attitude instruments such as the PARI will ever obtain such validity that they can be used in the same proported predictive ways as personality inventories such as the Minnesota Multiplasic Personality Inventory (MMPI), but this should not prohibit their use in attempting to understand feelings, emotions, and concepts that go into the makeup of the intangibles we call attitudes.

This study could have considerable value in attempting to understand some of the variables involved in raising and educating children, whether they are emotionally disturbed or normal.

The schools must accept the responsibilities of educating not only the child but the adult as well, not only in the traditional classroom subjects but in any subject that will make the future citizens of our society better able to meet the increasing demands placed upon them.

Courses could be established that would encourage better communications between parents and children and between husbands and wives.

Parental attitudes are learned behaviors and as such it is hoped that they can be taught and/or modified to give attitudes that will enhance the booming business of parenthood.

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ABSTRACT

A METHOD OF OBSERVING CLASSROOM BEHAVIOR OF EMOTIONALLY DISTURBED CHILDREN

by

John S. Werry and Herbert C. Quay

The measurement of emotional disturbance in children has two broad facets (a) diagnosis of emotional disturbance or differentiation from normality for purposes of treatment such as placement in special classes for the emotionally disturbed, and (b) assessment of change in an emotionally disturbed child's condition, particularly as a function of treatment. The authors describe a technique developed at the University of Illinois for the measurement of classroom adjustment of elementary school children by means of direct frequency counts of a number of behaviors, some deviant and some work related. The technique also provides some information on teacher pupil relationship in terms of the frequency and nature of contacts. An advantage is that the technique can be performed by a relatively unskilled observer without any professional experience. Experience with the instrument in both regular and special classes (for the emotionally disturbed) has shown it:

1. To be of satisfactory interjudge reliability
2. To have value as a dependent variable measure of particular therapeutic interventions such as medication, use of reward systems, etc.
3. To be useful as a general instrument to assess a child's progress in a special class setting and the success of his rehabilitation into a regular class
4. To hold potential as a diagnostic instrument for discriminating between normal and emotionally disturbed children.

ABSTRACT

DEVELOPMENT AND EVALUATION OF AUTOINSTRUCTIONAL PROGRAMS IN ARITHMETIC FOR THE MENTALLY HANDICAPPED

by

Conwell Higgins

Problem

The overall purpose of this study was to develop audiovisual equipment and materials for teaching educable mentally handicapped (EMH) children selected arithmetic concepts and to evaluate the instructional programs.

Rationale

The strategies of programed instruction and operant conditioning derive their theoretical rationale from Skinner's behavioral model of learning. Both strategies are designed to elicit criterion behavior. However, in the linear instructional programs developed in this study, the behavior is modified rather than shaped. The basic premise of programed instruction is that a concept is in the subject's repertoire if the behavior contingent upon an understanding of the concept is elicited.

Hypothesis

Programed instruction and conventional classroom instruction are equally effective in teaching selected arithmetic concepts to EMH children. The null hypothesis is as follows: There is no difference in the effectiveness of programed instruction and classroom instruction in teaching selected arithmetic concepts to EMH children.

Procedure

The AVM System consists of 21 programs and the AVM Desk. The effectiveness of the System was determined by four pilot studies. This abstract deals only with Study I in which the experimental design was a Pre Post combined with a Post only, together with a Post Post to study retention.

Results

The total error scores, Pre Post combined with Post only, are presented in Table 1.

Table 1. Pre Post Combined with Post Only
Total Error Score on the Three Units

		Pretest			Posttest			Change		
Ss	N	$\bar{x}$	Σx	Σx^2	$\bar{x}$	Σx	Σx^2	$\bar{x}$	Σx	Σx^2
E_1	12	76.1	913	77373	39.8	476	26104	36.3	435	16927

Table 1. (Continued)

E_2	12				38.1	457	20903			
C_1	16	84.2	1348	119240	75.6	1210	101432	8.6	138	3536
C_2	9				70.8	637	48619			

Interaction $t = .79$ $df = 45$ $p =$ N.S.

Pre Post Change (E_1 & C_1) $t = 6.27$ $df = 26$ $p = < .05$.

Post Only (E_2 & C_2) $t = 12.20$ $df = 19$ $p = < .05$.

The teaching effectiveness of the AVM System was significantly superior to the conventional classroom instruction.

With respect to retention, both groups maintained the concepts taught and continued to learn the concepts following treatment. The null hypothesis: There is no difference in the effectiveness in teaching selected arithmetic concepts to EMH children by programed instruction versus classroom instruction, was rejected.

Limitations

It was demonstrated that trainable mentally handicapped children learned little in the programs of sets, elements, and matching one to one.

The AVM System is not commercially available. However, the system is in public domain and is deposited at the Office of Education.

Implications for the Education of the Mentally Handicapped

The implications of this study are:

1. More simple and more complex prearithmetic and arithmetic concepts need to be programed.
2. The procedure and system may also be effective in teaching other kinds of handicapped children arithmetic concepts.
3. The procedure and system may be effective in teaching EMH children other visual and auditory discriminations that are crucial in early reading programs.
4. Other evaluative studies need to be conducted to determine the effectiveness of the system when used under different conditions and procedures.

ABSTRACT

THE PERFORMANCE OF GOOD AND POOR BRAILLE READERS ON CERTAIN TESTS INVOLVING TACTUAL PERCEPTION

by

Lawrence H. Weiner

Purpose

The primary purpose of this study was to investigate tactual perception of good and poor braille readers on certain selected tests. A secondary purpose of this research was to provide a basis for the conduct of further research into the many problems encountered in the reading process of the blind with the hope that information could be gleaned to better understand reading for the blind and its pedagogical implications.

Method

Two groups of children from grades two through six, 25 children in each group, were selected on the basis of the following requirements: (a) legally blind before eighteen months of age, (b) nonbrain injured, (c) residence in schools for the blind, and (d) Hayes-Binet intelligence quotients of no lower than 85. One group of 25 children was selected as the poor readers on the basis of achievement of one grade or lower than present grade level on the Stanford Achievement Test paragraph meaning section. The good readers were selected by achievement at grade level or higher on this same test. Both groups were matched on mental age, chronological age, and grade placement. All children were given the following tests: (a) the simple sorting test, (b) the simple figure background perception test, (c) the simple matching test, (d) the complex sorting test, (e) the complex figure background perception test, and (f) the drawing test. The tests were designed by the author and given in this order. Statistical analysis of significance of difference was made through use of the Fisher *t* test. Additional statistics were computed to investigate the influence of mental age, chronological age, intelligence quotients, and reading achievement on test performance. Also, sex differences were examined.

Conclusions

The *t* tests yielded the following results:

1. There was no statistical significance of difference between the two groups on the simple sorting test.

2. There was no statistical significance of difference between the two groups on the simple figure background perception test.

3. There was no statistical significance of difference between the two groups on the simple matching tests.

4. A significant difference was found between the two groups on the complex sorting test.

5. Significance of difference was found between the two groups on the complex figure background perception test.

6. A significant difference was found between the two groups on the drawing test.

The correlations between each of the test and the four variables of mental age, chronological age, intelligence quotients, and reading level within each group yielded no significant or definitive trends. In addition, no significant sex differences were found within each group.

It was concluded that none of these above mentioned factors influenced the differences found between the good readers and the poor readers on the complex tactual perception tests. It was suggested that factors such as differences in neural sensitivity in the finger tips, and differences in gross or fine motor coordination were possible explanations for the test differences. It was also considered that tactual perception may be a skill in isolation of influential factors.

Inasmuch as this research was a pilot study, the need for additional research to further investigate these factors was pointed out. The possibility of the refinement of the test instruments was mentioned as worthy of research so that they may be developed as a reading readiness test for use with blind children. Finally, the need for reproduction of this study with more stringent controls and larger groups of subjects was indicated.

ABSTRACT

A STUDY IN THE USE OF PROGRAMED INSTRUCTION IN TEACHING ADDITION AND SUBTRACTION TO INTERMEDIATE LEVEL EDUCABLE MENTALLY RETARDED PUPILS

by

Gordon F. Johnson

This experiment compared the results obtained from two groups of educable mentally retarded subjects using programed arithmetic instruction with a similar group using teaching lesson plans. The sample consisted of 72 subjects with IQ's of 49 through 80, Chronological Ages of 108 through 166 months, and with Mental Ages of 71 through 130 months. *Group A* studied from a program designed by the investigator, while *Group B* studied from a commercially developed program, TMI-Grolier's *Elementary Arithmetic: Addition and Subtraction Facts*. During the ten weeks of study, *Groups A* and *B* alternated their programed textbook sessions with teaching lesson plans on two days every week. *Group C* studied from teaching lessons exclusively, which had been specifically prepared for this study.

Each of the groups was limited to a 25 minute arithmetic period each school day. Parallel forms of sections from the *California Arithmetic Test* were used as the criterion instrument to assess achievement in addition and subtraction skills. All subjects were administered one form of the criterion test as a pretest of prior knowledge; the alternate form was administered upon completion of the study.

The results of this experiment tend to support the premise that programed instruction, when alternated with teaching lesson plans, can produce substantial differences in learning:

1. The observed difference between the mean gain was significant at the .01 level in favor of Group A.
2. The observed difference between the mean gain scores for the lowest quartile of Group A and Group C was significant at the .01 level in favor of Group A.
3. The observed difference between the mean gain scores for the lowest quartile of Group B and Group C was statistically significant at the .01 level in favor of Group B.

Evidence suggests that the use of appropriately programed materials, when used in combination with teaching lesson plans, may be more effective with the educable mentally retarded than the use of conventional lesson plans alone. The retarded child appears to adapt to programed instruction and makes as much or more progress through these approaches as he does through conventional teaching methods.

"SPONTANEOUS" IMPROVEMENT IN EMOTIONALLY DISTURBED CHILDREN

by

John P. Glavin

Problem

Most programs for emotionally disturbed children have been based on the belief that the most effective way of preventing serious emotional problems is the early identification of the potential or actual emotionally disturbed child followed by the necessary therapeutic intervention.

This approach was characterized most explicitly in the California Project (Bower, 1960; Lambert, 1963). Their basic strategy was to improve the accuracy of teacher judgments through the use of standardized measurement techniques, supplemented by peer and self measures of children's adjustment. By this method they proposed that an effective and economical early detection program could be accomplished in the schools. They stated that school programs which aimed to develop personality and build academic achievements of such pupils were increasingly inclined to break down following the early indications of an evolving problem, and that "...for early identification to be effective, we cannot wait until we are certain that a long term behavior problem is in the making; we must act at the first signs of difficulties (p. 6)."

Previous studies have pointed out that surveys of children may expect to find that five to 20 percent manifest signs of emotional disturbances, but little is known specifically about the children or the range of services that will be required to help them. It is to be expected that some of the emotional disturbances reported in single surveys will disappear within a relatively short period of time and require no special services. Others, however, may progress to firmly fixed patterns of disturbed behavior.

The present study investigated spontaneous improvement in children who had been identified as emotionally disturbed but who had not had special educational or psychiatric care. It questioned the basic assumptions that had been mentioned in connection with early detection programs. It proposed a test of the hypothesis that children who were identified as having problems would continue to manifest such problems over a period of several years, when they did not receive any formal treatment.

Related Research

Past studies have fallen primarily into two groups: those which used a screening device to measure emotional disturbance and then used either post or prior criteria such as achievement scores, delinquency records or clinical judgment in an attempt to validate the original screening index, and those which attempted to compare a treatment group with a control group. Both methods have disadvantages which will be elaborated upon.

Screening Against a Criterion

While many methods had some validity for identification of emotionally disturbed children, no unanimously accepted validity criterion for the evaluation of early identification indices existed. Their designers had to rely on one or more of the ordinary definitions of mental health or mental illness.

In 1960, Bower reached the following conclusions related to the validity of classroom screenings:

1. Children's judgments of other children's personality were surprisingly accurate and predictive.

2. Teacher's judgments of emotional disturbance were very much like the judgment of clinicians.

3. The differences between emotionally disturbed children and their classmates increase in succeeding grade levels (p. 62).

The basis for the above conclusions by Bower were the following. On a peer rating device children tended to choose emotionally disturbed children for hostile, inadequate or negative roles and did not select them for positive roles. Classroom teachers rated 87 percent of the clinically known emotionally disturbed children as poorly adjusted. Finally, emotionally disturbed children achieved significantly lower scores on reading and arithmetic tests and these differences between the disturbed children and their classmates increased as the children progressed in school.

The basic supposition behind the association between adjustment and achievement (Bower, 1960; Lambert, 1963; Stennett, 1966) has been that the better adjustment, resulting from the treatment of a problem, is reflected in better academic achievement. Using such measures requires an unsupported inference on the part of the researcher, namely, that the observed achievement test scores do reflect change in adjustment. Other studies (Buswell, 1953; Wolf, 1965) have cast doubt upon the validity of the supposition that declining academic grades may signify poorer adjustment.

The studies reviewed have suggested that the use of school achievement as a criterion poses many problems. Bower's study (1960) and others indicated that teacher ratings, self descriptive data, and peer ratings, when combined, gave the clearest, most comprehensive, and most economical picture of the adjustment status of children. Therefore the present study used such an index for both pretest and posttest criteria. Even though the research presented previously made no claim for the ultimate validity of the screening devices used in this study, there were enough positive findings to indicate that such a screening procedure showed promise in a program of early identification.

Outcome Comparisons

The Levitt study (1957) points out that past research, using defector groups from psychotherapy as a baseline, has not supported the belief that psychotherapy is effective with children. Levitt suggested that research on the comparability of defector control groups is conflicting, but that it appears to be one appropriate means of providing a baseline of change in the absence of treatment.

Hood-Williams (1960) questioned the use of waiting list defectors by Lehrman (1949) and Witmer (1942) and accepted by Levitt (1957), as having serious drawbacks. After criticizing the use of a waiting list control group, he said that "...the literature contains no studies where the controls have been obtained by any other method...(p. 84)."

It seemed, then, that although nontreated controls would improve experimental designs, their use in the evaluation of continuity and intervention studies has encountered serious obstacles. These difficulties had been especially noticeable in research on clinic populations, where nontreated controls have never been used to this writer's knowledge. Most current psychotherapy research consists of comparisons of the pre- and posttherapy status of a single treatment group or comparisons of two or more groups, using different methods of treatment. One technique may be found superior to the other or may report differential change in patients, but the failure to include nontreated controls leaves crucial questions unanswered.

There is a study in progress which has circumvented many of the above mentioned drawbacks. The Onondaga County School Boards Association (1961) has instigated a followup of problem children in elementary schools. The design of their project to identify persistent problems involves three teacher identification surveys at two year intervals. The Onondaga Study has reported that of 515 children classified in 1961 by teachers as emotionally disturbed, 31.1 percent of the original group were again labeled as emotionally disturbed in 1963, (McCaffrey, 1963).

The results of the Onondaga Study have recently received support from the Buckinghamshire Child Survey (Shepherd, Oppenheim, and Mitchell, 1966). This study reports a comparison between a group of 50 children attending child guidance clinics and a group of nontreated children matched by age, sex, and degree of deviant behavior. The matched group was taken from a representative one in ten sample of supposedly healthy children attending local authority schools. The results indicate that referral to a child guidance clinic is related as much to parental reactions as to morbidity in the children, and, secondly, that approximately two-thirds of both groups improved over a two year period.

In contrast to the two previous studies, Stennett (1966) concluded that a significant number of children identified as emotionally handicapped were not likely to resolve their adjustment problem without help. His conclusion was based on the results of an initial screening and three subsequent investigations using a Bower type screening procedure similar to the one used in this study. He found an 85 percent persistence rate of emotional disturbance after one year and a 40 percent persistence rate after three years, but he minimized the latter finding as due to his use of an abbreviated screening technique for his last screening.

In summary, a review of the research of followup studies using screening against a criterion and followup studies using outcome comparisons has pointed out the conflicting results obtained by the different approaches. Studies which screen against a criterion generally assume that emotionally disturbed children will become worse unless help is obtained; however, these studies rely on the possibly misleading inference that there is a direct relationship between emotional adjustment and either a prior or posttest criterion such as school achievement. Studies using outcome comparisons have generally found that the majority of emotionally disturbed children "spontaneously improve" over time, but their results have been criticized for several reasons the foremost of these being the uncertain influence of the availability of future treatment on the disturbed child's status. Finally, three studies, which have circumvented many of the objections attributed to criterion studies and outcome comparison studies studies, have shown conflicting results. The Onondaga Study (1961) and the Buckinghamshire Study (1966) suggest that the majority of disturbed children improve without intervention, while Stenett's study (1966) concludes that intervention is necessary for most of the disturbed children.

Hypothesis

The present study used a Teacher Peer Self screening procedure for both pretest and posttest criteria. This procedure reduces the need to make inferences about the posttest criterion such as Bower's use of school achievement. Since the present study is concerned with nontreated emotionally disturbed children whose first screening results had not been made known to anyone, the uncertain influence of the promise of future treatment on the disturbed child's status was circumvented. Thus, criticism leveled at studies using one of the defector or waiting list approaches is not applicable.

The major objective of this study is to investigate spontaneous improvement in children who had been identified as emotionally disturbed, but who have not had the help of any special educational or psychiatric care. It questions the basic assumption underlying early detection programs that the majority of childhood problems would continue, or become worse if left untreated. The hypothesis to be tested is that a majority of children identified as disturbed will improve without treatment.

Method

In 1962, three elementary schools in the Anderson County School System of Tennessee were extensively screened. The screening method used sociogram techniques in classrooms, the California Test of Personality, and individual ratings of the five best adjusted and five poorest adjusted pupils by their teachers. This screening battery was administered to all children in grades two through five: a total of 773 children. The children included in this survey had moved to fifth through eighth grades, respectively, by the time of the second screening.

The independent variable to be studies was the effect of time, approximately a four year interval, upon the psychological status of children who had previously been identified as emotionally disturbed but who had not had the use of special educational or psychiatric services. The results of the first screening were not made known to the individual schools or children.

Instrumentation

The approach to identification of emotional disturbance used in this research employed a 25 point Teacher Peer Self index, which was administered prior to and after approximately a four year interval. Teachers were asked to complete the rating sheet as to whom they considered to be their five best adjusted and their five poorest adjusted children. No definitions of emotional disturbance or adjustment were given to the teachers. Pupils were asked to complete a sociogram form requesting them to choose their three most liked and their three least liked classmates. The children were told beforehand that this information was confidential and that no school personnel or others would see their choices. The peer nomination forms were distributed and collected by the research assistant rather than the classroom teacher. To minimize spelling difficulties, the teachers said all children's names and wrote them on the chalkboard. The California Test of Personality was administered according to the instructions in the test manual. Teachers were requested beforehand to supply the names of all children reading below a fourth grade level. The test was read to this group of children while a monitor assited those children who needed further help.

While teacher selection brought an automatic addition or deduction of four points, both the peer rating and the California Test of Personality were scored from one to four points, the amount depending upon the extremity of the subtest score.

In order to secure information as to whether any type of intervention has been attempted, such as special education classes, referral to a child guidance clinic, psychotherapy, or other methods, the parents were requested to a complete a form which contained questions covering many extraneous areas in addition to their child's mental health, This approach was used so the parents would become neither alarmed nor anxious. Also, after the teachers completed their ratings, they were requested to supply the names of pupils who had received any type of intervention, i.e., help of either a special educational or psychiatric nature. "Treatment" is used in the present study to pertain to the more limited concept of only psychiatric care.

Results

Scope of the Study

Only the major results will be presented. A more detailed analysis is reported elsewhere (Glavin, 1967).

The population of 508 fifth through eighth grade children in 1966 represents 65.8 percent of the original cohort of 773 children in the second through fifth grades in 1962. The remaining 34.2 percent moved out of the county, transferred to another school system within the county, or were second grade children in 1962 who repeated a grade at some time between 1962 and 1966. The children who had been held back in other grades at some time during the four year study period comprised 4.4 percent of the original 1966 cohort exclusive of the second grade repeaters. The cases of children with no second screening were largest in the second grade and decreased with each succeeding grade.

Children Who Were Reported as Emotionally Disturbed

In the initial group of 733 children who completed the first screening, there were 100 (70 boys and 30 girls) who were screened as emotionally disturbed in 1962. The 70 boys so designated comprised 17.3 percent of all boys in the group; the 30 girls comprised 8.1 percent. The overall incidence of children classified as emotionally disturbed was 12.9 percent. The greater number of boys in the cohort inflated the overall percentage of emotional disturbance somewhat.

Emotionally Disturbed Attrition Cases

Before reporting on the persistence of emotional disturbance from 1962 to 1966, some study should be given to the 54 percent of the initially designated emotionally disturbed children who were not present at the second screening, i.e., the attrition cases. This rate is considerably higher than the 34 percent attrition rate for the total sample of 773 children followed up after a completed first screening. Without further knowledge the discrepancy between the two rates of attrition would suggest the possibility that the followup cases of emotional disturbance represents a biased sample. Information was requested from the school authorities and mental health facilities in Anderson County concerning the 54 children designated as emotionally disturbed initially but who were not available for the second screening. Fortunately, information was available for all but one child.

Ten cases of the 53 disturbed children who were not followed up but for whom information was available seemed likely to have persisting emotional problems. One girl had dropped out of school because of pregnancy, while three children had failed a grade twice. Six children were in special classes with two of them having moved out of the county. One child was in a special class because of minimum brain damage while another boy had been returned to a regular classroom. The remaining four children were in special classes for the educable mentally retarded (EMR).

Of the 54 emotionally disturbed children who did not take the second screening, only five seem to have persisting emotional problems according to their histories, while four children in special EMR classes were of questionable status, and no information was available concerning one child. In addition, three children eliminated from this study due to name confusion were screened as nonemotionally disturbed at the second testing, if the matchings were correct. Thus, it is unlikely that the high attrition rate of the emotionally disturbed has led to a biased sample among the remaining 46 emotionally disturbed children who completed a second screening in 1966.

Persistence of Emotional Disturbance

After eliminating the three cases who received intervention there were 13 (six boys and seven girls) in the combined group of 43 children reported as emotionally disturbed in 1962 who were so designated again in the second survey of 1966. They comprise 30 percent of the original group of 43 children described as emotionally disturbed in 1962 and who had not received any type of intervention.

Children in the four lowest categories on the initial screening show fairly equal amounts of mean change. This would suggest that if some point lower than the arbitrary cutoff point of seven had been previously decided upon, this would still result in a comparable percentage of persistence of emotional disturbance, as was reported in this study. For example, instead of the persistence rate of .30 found with a cutoff score of seven as used in this study, the use of a cutoff score of six would have resulted in a .21 rate of persistence while a cutoff score of five would have yielded a persistence rate of .17.

A comparison of the first screening scores of the initially designated emotionally disturbed children by groups of changed versus nonchanged on the second screening was made. The _t_ test revealed no significant difference between the two means. This suggests that the initial score on the first screening is not a major factor in predicting a child's future adjustment category.

Effects of Regression

One problem in studying the persistence of emotional disturbance is that the changes in (extreme) scores between tests of those children designated as emotionally disturbed on the initial screening may be partly attributed to a statistical regression toward the mean. Lord's (1956) multiple regression procedure was used to calculate the estimated true gain (G) between screenings for each person. This model is designed to take into account regression effects resulting from errors of measurement. For each child having completed both screenings G was calculated by the formula: $\overline{Y} - \overline{X} + b_1 (X - \overline{X}) + b_2 (Y-\overline{Y})$.

Each child's estimated true gain score and his actual gain score were then plotted against his pretest score. The mean actual score changes are greatest at both extremes on the second screening. Those children having an initially poor adjustment score showed the greatest actual gain, while children scoring high on initial adjustment tended to have the greatest actual loss on the second screening. Much of this apparent gain simply reflects error of measurement, as the estimated true gain change was not nearly as spectacular as the actual scores.

The mean estimated true gain scores of each of the emotionally disturbed score categories showed consistently greater gain than the mean estimated true scores which occurred for each of the equally extreme score categories for the best adjusted children. A _t_ test was made on the differences of estimated true change scores between the initially designated best adjusted and emotionally disturbed categories. The resulting _t_ test was significant at the .05 level, indicating that the emotionally disturbed children showed greater change toward the mean than did the best adjusted group.

A second method of examining regression effects was undertaken to determine if the regression factor accounted for all or most of the 70 percent change between screenings for the initially designated emotionally disturbed children. The persistence rate of emotional disturbance was contrasted to the equally extreme scores of the best adjusted children on the first screening who remained in the same adjustment category on the second testing.

The null hypothesis, that the proportion of best adjusted children who changed out of the category was equal to the proportion of emotionally disturbed who changed out of the category was tested in a four fold chi square test of independence using Yates correction. The chi square (3.40) approaches the .05 level of significance (3.84) with one degree of freedom.

Predictive Ability of Screening Instrument

Some interest attaches to obtaining an approximate confidence interval for the proportion of persons designated as emotionally disturbed on the initial screening who are classified as nondisturbed on the followup testing (.70). The confidence interval was derived from the approximation given by Hays (1963, p. 291). It was found that the chances are 95 in a 100 that the percentage of initially emotionally disturbed children who will not be screened as emotionally disturbed following a four year interval is between 54.9 percent and 81.8 percent.

Discussion and Conclusions

Analysis of Major Results

The most crucial question this study attempted to answer concerned the continuity of emotional disturbance in nontreated children. The 30 percent persistence rate found agrees with past studies which used therapy dropouts or some other group as controls. There was a 95 percent probability that future studies of the persistence of emotional disturbance for the same four year period using children of the same age would find that between 55 percent and 82 percent of the nontreated children would have changed categories by the time of the second screening. This confidence interval roughly coincides with the range of results reported by past clinical studies.

The persistence of emotional disturbance was examined according to the severity of initial screening score. The mean amount of change was approximately the same for the four lowest of the five score categories below the cutoff point. This would suggest that if some point lower than the arbitrary cutoff point of seven had been previously decided upon, this would still have resulted in a comparable percentage of persistence of emotional disturbance. The t test revealed no significant difference between the initial mean scores of the changed and nonchanged emotionally disturbed categories, which suggests that the extremity of a score from the cutoff point is not a major factor in predicting a child's future adjustment category.

The problem of regression toward the mean was examined in two ways. First, Lord's multiple regression procedure (1956) was used to calculate the estimated true gain or change between screenings for each student. The differences on the second screening between the mean estimated true gain scores and the mean actual change scores are greatest at both extremes of adjustment. The estimated true gain scores tended to cancel out the extreme changes shown by the actual scores of the emotionally disturbed and the best adjusted children at the time of the second screening; therefore, the changes in adjustment categories between screenings for both extremes on the first screening can be partially attributed to a regression effect.

For each of the emotionally disturbed score categories, the mean estimated true change scores showed consistently greater gain than the mean estimated true change scores which occurred for each of the equally extreme, best adjusted, score categories. A statistical test of the differences of estimated true change scores for the well adjusted and emotionally disturbed groups on the second screening was significant at the .05 level, indicating that the emotionally disturbed group showed a greater change toward the mean.

The null hypothesis for the second method of examining the regression problem was that the proportion of best adjusted children who changed out of the category was equal to the proportion of emotionally disturbed who changed out of their original category. The chi square approached the .05 level of significance. For purposes of future investigation it may be advisable to take the position that there may indeed be a greater change in the emotionally disturbed children on the second screening. This tentative conclusion suggests that the regression factor only accounts for part of the 70 percent change between screenings for the initially classified emotionally disturbed children.

One possible explanation for the proposed difference in change rates between the two extreme adjustment categories is that there are two tendencies at work in children. One tendency would be to integrate those behaviors which are rewarded in some way into a durable and stable arrangement of habits; this pattern should be found most often in children designated as best adjusted. A second tendency would be the opposite--the tendency to respond variably when behavior is not rewarded, which would result in the breakdown of old forms of habit patterns and their replacement with new ones. In general, the second tendency should be found more frequently in emotionally disturbed children. However, it should be emphasized that this reinforcement paradigm is concerned with tendencies rather than absolutes. In the everyday world inconsistent reinforcement of both deviant and well adjusted behavior is likely to happen.

Wolpe (1958) has included spontaneous improvement within his theory of therapy based on reciprocal inhibitions. He suggests that neurotic habits can be overcome through inhibiting the responses by simultaneous antagonistic responses. He believes that this phenomenon might be expected sometimes in the ordinary course of life.

Eysenck (1960) believes that the time of spontaneous improvement is similar to the typical extinction curve observed in learning situations. That is, a learned response declines in strength if it is repeatedly evoked by the conditioned stimulus but is not followed by reinforcement. Eysenck considers that almost all neurotic symptoms can be extinguished by nonreinforcement, and that this process is seen in everyday life in the form of spontaneous remission.

After studying the therapeutic changes in children with behavior disorders, Rachman (1963) believes it possible that a third learning process, in addition to inhibition and extinction, may be involved in spontaneous improvements. This process, known as latent learning, may be responsible for spontaneous remissions in disorders which arise from the patient's failure to learn an adequate way of responding. Final proof of the value of the various learning theory approaches must be sought in future research.

Since some of the best known screening procedures for emotional disturbance are somewhat comparable to the one used in this survey, many of the children screened as emotionally disturbed using current procedures could be expected to improve without intervention. Therefore, it would seem advisable that modifications of the screening procedure plus other alternatives receive further experimentation. This would seem crucial if one is to expect information gained in future surveys to provide better guidance for school personnel in making and implementing plans for the persistent cases of emotional disturbance.

A major objective of future research should be a better understanding of the processes involved in the 70 percent improvement rate. There is some speculation but little research regarding background factors or experiences in the child's life that facilitate recovery without intervention. The persistence rate reported in this study should not be confused with persistence rates for profoundly disturbed children. It referred only to children who remained in regular classes of the public schools and did not include children exempt from school, in special schools or institutions, or children in special classes. While relatively rare psychotic children can be expected to have a higher persistence rate, it should be remembered that most emotionally disturbed children continue to remain in regular public school classrooms.

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ABSTRACT

THE EXPERIMENTAL ANALYSIS OF VOCATIONAL BEHAVIOR IN SEVERELY RETARDED MALES

by

James E. Crosson

Working from a population of vocationally naive, severely retarded residential school patients, an attempt was made to program subjects on selected workshop tasks. Functional analyses were performed to specify stimulus and response components of the respective vocational environments. Variables identified through this procedure were then employed as the basis for experimental training programs which incorporated principles of shaping, operant discrimination, and chaining of responses.

A preliminary study was conducted in order to determine the response acquisition characteristics of a sample of ten subjects. Two experimental tasks were introduced, each requiring the acquisition of chain of over 100 complex response sequences. The resulting data showed that response acquisition was reflected in positively accelerated exponential curves. Acquisition rates were such that, on the average, subjects could perform the complex tasks reliably (without prompting) after six hours of training.

A second study was deisnged to evaluate the effects of schedules of social and extrinsic reinforcement in maintaining performance rates following training on the two tasks. Both nonscheduled social and carefully programed token reinforcement were shown to maintain performance rates of adequate levels, however, the latter produced more stable response characteristics.

A third experiment was conducted to study response characteristics and reconditioning following two month and 12 month intervals of no exposure to the experimental environment. There was essentially no loss in performance at the two month sampling. For the one year interval, the average number of response failures was 2.5, indicating that approximately 98 percent of the originally conditioned behavior sequences remained intact in the subjects' repertoire. Reconditioning of the few response failures occured rapidly.

TEACHER EDUCATION

TEACHER EDUCATION: RATIONALE VERSUS REALITY
A STUDENT POINT OF VIEW

by

Joellyn N. Rose

The growing trend towards the education of the multiply handicapped child is the basis for this discussion of my college preparation for teaching. I believe it will take a much wider field of knowledge even within the framework of special education to deal with the growing awareness of the multiple complexities of any handicapped child. I would hope that all of the following comments could be tempered with a basic liberal arts education, the backbone of a multiply equipped teacher.

My undergraduate work was done at two institutions: Kalamazoo College (freshman and sophomore), a fine private liberal arts school, where I first met retarded children as a worker at the Dixon State School for the retarded in Illinois; and Western Michigan University, where the bulk of my teacher education training was received.

This discussion is divided into three main topics: Rationale _Being_ Reality, Rationale _Versus_ Reality, and Rationale _Becoming_ Reality. The first section includes the contributions and strong points of my training program.

Rationale Being Reality

First of all, Western had a relatively small, close knit, and well integrated special education department, with most students retaining their identity. In a university as newly enlarged and consequently unorganized as Western, the closeness of the department was appreciated. Our classes were sometimes small, ten to fifteen students, sometimes larger. Oddly enough, it was not always the smallest class from which the most was gained, although classes of more than 25 to 30 people would have been too large.

A second strong point of my training that could have been used more often was the use of outside speakers. Two that particularly impressed me were Dr. James O. Smith and Dr. Herbert Goldstein, both eminently qualified to speak and be heard in special education. There were others also--a behavioral psychologist, a biologist, a teacher, and the director of the Educational Research Center, for example, who added depth and breadth to our understanding.

Field trips were more educational than recreational, a reversal of high school policies. Many students had ever seen retarded children in great enough numbers to be really impressed by the multitude of complexities often accompanying "simple" retardation. We visited a state institution and various educable mentally handicapped and trainable mentally handicapped classes. It would have been beneficial to have also seen a private school situation, perhaps a clinic such as a child guidance center, and to have attended even a mock up of a medical and/or educational staffing. I have done this on my own, but a class attendance with ensuing discussions would have been more meaningful.

Teachers are, for example, expected to attend a "future placement" type staffing at the end of each year, and prior experience in this area would be helpful.

One of the best courses I had was the class in all areas of exceptionality, which gave a good overview of all special children and put some perspective on my own future role with them.

The importance and growing awareness of the needs of multiply handicapped children is another area substantially engrained in my own department's program. However, this awareness could be more strongly emphasized with accents on emotional and perceptual problems, and, to some extent, physical capabilities. Most severely physically handicapped children will not be cared for in an educable classroom, but vision and hearing defects are more prevalent than in a regular classroom, as is poor coordination. For example, out of the 14 children who are in my room eight can copy from the board--if they are right in front of the work to be done and less than ten feet away. This could also be a perceptual problem but two already wear glasses and three more have been recommended for optical testing by the vision screenings at school. Seven out of the 14 children showed some evidence of hearing loss when recently tested at school.

Another point for the inclusion of related classes in the curriculum is the invaluable pointers picked up in the class on speech correction, taught by the speech pathology department. Almost my entire class has substitutions of one kind or another, (w/l, w/r) and one child can say only six initial consonants. Group classroom instruction in speech sounds aids everyone concerned, most of all the children, through reinforcement and repetition.

A fifth reality were the required courses in elementary education. I found the courses in math, art, and music much more beneficial than that of the teaching of reading, almost entirely on the strength of the individual instructor's abilities and knowledge. As my training in child growth and development was with the psychology department at Kalamazoo College, my knowledge in this area was rather different than that of fellow students at Western Michigan who took the class from the education department. While I can't judge because I have not taken both courses, I seemed to have remembered more than most of my friends.

Finally, the methods and materials course was of real benefit in that there were many graduate teachers in the class and their presentations of methods and materials was more nourishing than a textbook example or list. Many of the materials presented in that class are being used today in my classroom, and others are being explored for possible county wide use.

Rationale Versus Reality

In relation to the subject of methods and materials, I will say that, other than pointers picked up from fellow students, the main source of my training in methods was my supervising teacher during student teaching. The academic classroom experience in no way compared to the practical application found in a classroom of children. While there really is no solution for this discrepancy between intent and truth, beyond actually being in or observing a classroom, this is a possible area of improvement.

A second rationale versus reality problem was part of the student teaching block itself. At the time, the required seminars for discussion of learning were rarely ever elementary education in bent or supervision, let alone special education. Some of the information, such as the National Education Association versus the American Federation of Teachers, tax base, and reimbursement was necessary, but there was very little discussion of more classroom oriented problems. A lot of the problem could have been eliminated by separation of the "seminar" from the School and Society course and/or the elementary from the secondary teachers. Many problems are common to all young children, however, so special education should not necessarily be separate from elementary education.

Point three in this category is the selection and supervision of critic or supervising teachers. There have been and are being vast improvements made in this area at Western (in the special education department), but the general system for regular students seems a bit chaotic, probably due to size. It would help to have a confidential student teacher appraisal questionnaire of the supervising teacher. I am sure most "bad apples" would be eventually eliminated if enough honest and sincere students criticized a supervisor's lack of methods, materials, or classroom personality.

Rationale Becoming Reality

Number One in this category would without question be a five year course of study for special education teachers. One could finish in four years if necessary by going all year around, but more courses are necessary to make a well rounded teacher than are currently required.

I am firmly convinced that one course added to all elementary and even secondary teacher education requirements would really help to promote better understanding and cooperation between "special" and "normal" teachers: a course in exceptional children. All main categories of exceptionality could be covered with some detail. This course, given at the freshman and sophomore level, might recruit special education teachers. Students leaning toward special education could then take further courses in the areas of their interests--perhaps to obtain a degree. The main benefit, however, would still be to give some idea of what goes on in special education to future fellow teachers. I might add that I do not think the course should be watered down in the least for mass injection into education students. That would defeat the purpose of the course in the first place and perhaps recruit easy going middle of the roaders.

Included in a list of more course work in related fields would be more art, both creative and craft work, especially for primary teachers. Often an art teacher is nonexistent, unavailable, or unable to cope with the limited skills of a primary Type A room. While I do consult with our art teacher, who is very capable, about projects for my class, it often takes me hours to scale projects down to a reasonably successful fun activity time. I doubt if the art teacher has the time.

Music is another area in which the special teacher needs help finding things to do with music in the classroom. Rhythm, sound, and listening activities are usually musically oriented. A creative music methods and materials class would fill gaps left by the Music for the Classroom Teacher class.

Physical education is not all games. Our program is a selected integration of Doman-Delacato, Kephart, and Locke-Rose (our gym instructor and myself) activities designed to improve coordination and perception. I am not sure this type of information would be found in a college physical education class, but it must be found somewhere. A child is not going to learn to read if he doesn't even know which side of his body you are moving for him.

A class in the teaching of elementary science would also be useful. While the units are usually brief, the true nature of science exploration and experimentation is tasted for the first time (usually) in the first school years. A child in the third grade probably won't be too excited about a thorough study of the reproductive system of a flower if he has no idea how to relate the information or make it come to life.

Mathematics and language arts are probably the two most important areas of learning to a retarded child. Without any number concepts, for instance, a boy can't really play football, and without language arts, he can't write home about the score. Modern mathematics has a lot to offer, perhaps especially to a retarded child. I think future teachers should have a firm grasp of the modern math program before trying to teach that a one (1) is different from a two (2). As for language arts, a special course in reading and/or language art activities would be more beneficial than a course that investigates the comparisons and contrasts of different publishing houses' products.

It is unfortunate that psychology is not usually allowed as a teachable minor for an undergraduate. I would like to have had more, particularly in the child development and testing (results and interpretation) areas.

Related to major field course work could be a second advanced course for all special education majors and interested persons. I would also like to see some advanced courses in speech therapy, such as articulation disorders, a course in emotionally disturbed children, and one in perceptual handicaps, to be recommended if not required. I very much enjoyed my class on the physically handicapped and liked to observe the deaf children in our preschool program for the physically handicapped in particular. A minor addition to the education of the mentally handicapped class could be curriculum planning for a given class of real children, rather than the imagined ones.

A fourth area open to improvement is that of actual work or observation experiences with variously handicapped children. A cadet teaching program similar to that used in many high schools could be used to aid freshman and sophomores in relating academic learning to actual practice. Volunteer tutoring or teacher aide services would be beneficial for the college student as well as the pupil or pupils. Another improvement would be split terms of student teaching, the first in one's junior year and lasting perhaps only four to six weeks. This experience would give a background for the later courses on methods or materials, and students' experience would allow them to discuss specific problems. The senior (or fifth year) student would then have a regular 16 week semester of teaching in a Type A classroom and eight weeks in a regular class, or whatever is necessary to satisfy state requirements. From experiences of others and myself, one does become impatient to get in the classroom after student teaching for any length of time, so adjustments would probably have to be made so as not to totally frustrate the future teacher.

Fifth, I would like to see a materials class (optional or elective) dealing only with new or currently researched educational aides and methods, perhaps encompassing all of elementary education. It is much easier for a new teacher to experiment with a new tool than for a twenty year veteran to switch. As a part of this proposal, I would like to see research participation with the faculty offered to interested and capable students.

Sixth, as part of the student teaching block seminar, if not before, there could be seminars with actual teacher participation. Perhaps this Type A teacher could present her class of children, or a selected few, descriptively and realistically for the first portion of the seminar and then have her problems made open to discussion, suggestions, and solutions. Or maybe the teachers and student teachers could just meet and discuss their problems. To avoid toe stepping, the group could be split, one half students meeting with the other half's teachers and vice versa.

Sandwiched in someplace should be workshop and local conference attendance on a broadening scale. To top off the whole five year program, the graduate would have a basic liberal arts education. Maybe this sounds as if it is asking too much of an undergraduate and would leave no time for vacations, relaxation, and recreation. But on a five year basis, I believe it could be done and I think such a program would produce more adept, mature teachers.

ABSTRACT

THE TEACHING LEARNING PROCESSES IN OBSERVATION SEMINARS

by

Thomas M. Shea

This research deals with certain aspects of the broad and complex problem of studying the effectiveness of the teaching learning process. Specifically, it is concerned with designing and testing objectively verifiable procedures for the analysis and description of the classroom process in a natural setting. Using the social interactionist's model for small group study, the investigator applied various instruments to quantify the classroom process and develop a meaningful, yet objective, description of that process. The subjects were two Special Education Observation Seminars.

In order to describe the teaching learning process, it is desirable to obtain a set of indices of the structure and dynamics of interaction in such groups as the seminars. Among the instruments used in this study were interaction process analysis, questionnaires concerning attitudes and feelings of the participants, personality tests, various time and interaction rate measures, and sociometric instruments. The data obtained from the application of these instruments and from the analysis provide descriptions of three elements--the total group, the instructor, and the student members of the seminar.

This paper focuses on two descriptive indices which are discussed in detail, i.e., interaction profiles, and Who to Whom matrices. The investigator also presents a brief overview of the social interactionists model for small group study and the Bales' System of Interaction Process Analysis.

The results of the analysis of the data indicate that, although control exercised in previous small group laboratory studies was not applied in this investigation, the social interactionist's model is applicable for the purpose of describing the observation seminar process in the natural classroom setting.

The need for the development and application of observation techniques

in research on teaching and the necessity for conducting multiple variable research on teaching and its effectiveness is demonstrated.

Implications for future research focus on suggestions for improving the observational techniques applied, the need for measurable objectives in instruction, interaction process analysis as a method of observer training, and the application of seminar analysis as a feedback system to improve instruction and group functioning in the classroom.

INTEGRATING THEORY AND PRACTICE IN TEACHER EDUCATION CURRICULUMS

by

Joseph J. Eisenbach

If those engaged in the preparation of teachers in colleges and universities throughout the United States are sensitive to criticisms emanating from personnel in public and private schools, clinics and social agencies, it should become abundantly clear that teacher education curriculums are in dire need of review and updating. With alarming consistency and dogged determination, graduates of our curricular models continue to question the efficacy of present modes of professional preparation. To be sure, there are always those who harken back to the good old days when more emphasis was placed on practical solutions to educational problems and less concern was shown for theories and abstract educational prescriptions. Nonetheless, a discernible segment of the profession continues to plead for the juxtaposition of theory and practice. Those who wish to become actively involved in examining, applying, and evaluating theoretical models appropriate to education and closely related disciplines have, in the past, been discouraged and at times ridiculed. However, as long as professional preparation stressed the practical approach to teaching, accompanied by an array of techniques and a multitude of paraphernalia, teachers will be inadequately prepared to cope with all of the behavioral complexities presented in a classroom at any level in our educational system. One cannot deny the fact that techniques and hardware provide some educators emotional security and professional status. Likewise, certain school systems enhance their image in the eyes of their patrons with attractive displays of expensive equipment and materials. Nevertheless, competent educators and informed critics of our profession appear to agree that even in this technological era teachers must always be the masters of the machines they employ and the architects of their institutional plans and stratagems. How then might such mastery be attained?

At the outset, those responsible for developing a curriculum for the preparation of teachers must determine the nature of the product they intend to nurture, train, and develop. In performing this arduous task, high priority must be given to the mission of discerning requisite objectives stated in behavioral terms. Once these behaviors have been defined and delineated, attention must then be directed toward sequencing, teaching, and developing these goals. Although the designer of this professional undertaking becomes immediately involved in the integration of theory and practice when selected behaviors pertinent to conducting an institutional program are defined, their most formidable responsibility will be the development of a scheme that will provide a sequential offering of experiences combined with periodic evaluations of each professional aspirant.

Timing of experiences is a significant task to be achieved. Undergraduates who are in the terminal stages of their preparation are firmly convinced that greater emphasis should have been placed on providing opportunities to observe children and participate in various types of educational programs from the beginning of their training sequence. They claim that this makes their professional training more meaningful. Many professors are quick to support this point of view. Why? Have collegiate institutions been derelict in meeting the demands of their students? Do students and professors tend to assume that personal involvement with children, with or without supervision and in instruction, is a legitimate substitute for college classroom instruction? Both of these questions can be responded to in an affirmative manner. However, observations and participation should not be considered a panacea which will quell the criticisms of teacher preparation voiced by able students or offer immediate enrichment of present day teacher education sequences. In thinking about this problem, one is confronted with a time factor. When does one begin teacher preparation and at what point is this task considered to be terminated? Undoubtedly, there is a diversity of opinion among students and professors. Since experimental research data pertinent to this issue are practically nonexistent, tradition and practice appear to serve as major determinants of the length of the professional training period. A typical pattern of professional preparation places the would be teacher in a two year liberal arts instructional program prior to admission to the two year professional sequence. Perhaps the issue at stake is how optimal benefits can be derived from these final two years of undergraduate professional preparation.

To acquire balanced and enriched professional sequences in teacher education it is suggested that:

1. Institutional commitment to enhancing professional curricula include more than requesting students to observe and participate in various settings. While students derive much personal satisfaction from their contacts with children and youth, it is unrealistic to equate this manifestation of preprofessional interest with professional competence. Instead, if preservice training is to be utilized to the fullest extent, competent professional staff must be assigned to assist and guide students in their early explorations into teaching. Students should be directed to examine behaviors observed in various settings, discuss possible causes of such behavior, and determine courses of action a teacher might initiate in shaping children's behaviors.

2. As students advance in their professional training, collegiate classroom instruction may interrelate theory and practice by (a) providing live demonstrations of the application of methodology being proposed, (b) presenting televised productions designed to highlight a specific practice or technique, and (c) providing each student an opportunity to demonstrate his ability in the implementation of certain selected skills and understandings. In every instance, however, the student is entitled to know the basic underlying hypotheses of the method being applied, material used, and the objective to be attained. This enables the student to become cognizant of strengths and weaknesses inherent in educational methodology and materials and endows him with sufficient expertise to begin to determine and prescribe professional behaviors appropriate to individuals and groups to be instructed. Likewise, the collegiate instructor is obligated to present not one but several possible theoretical models for students to examine and evaluate. Contemporary educators are sometimes inclined to imbue their students with a single approach to teaching.

While educators of exceptional children have advanced the concept of individualized educational programing, it should be noted, and with some justifiable concern, that an increasing emergence of cults threatens to restrict the development of professional competence. Those who become devoted to the doctrines of these transitory groups invest all of their energies in defending the cult's dogma, resisting and deriding other educational designs and systems, and enhancing their own position by extensive recruitment. Consequently, capable but unthinking students become entrapped and fail to realize the shortcomings of their professional preparation.

An increased proliferation of behavioral, neurological, and educational categories in special education has, to some extent, enabled professional forces to zero in on the atypical individual. However, the current task of integrating theory and practice in preparing teachers and ancillary personnel in special education cannot be accomplished as long as adherence to and identification with a particular group or category continues to serve as the major qualification for becoming an educator. If a theoretical position is so tenuous that it cannot withstand an intelligent and penetrating analysis, and be compared to other positions, its inclusion in an educational training model should be questioned. Exposure to and understanding of major theoretical positions applicable to educating exceptional children enables the practitioner to render his services in an intelligent and competent manner appropriate to the needs of those he instructs. Therefore, it is imperative that undergraduate and graduate students enrolled in special education curriculums be confronted with a multitheoretical teacher education curricular model.

Professional competence should not be assumed when various theories have been examined and learned. Unless the student is afforded an opportunity to test and apply theories he has learned, his competence will be limited. Consequently, from the time that initial observations are planned to the completion of directed or practice teaching or practicum, emphasis should be placed on interrelating theory and practice. Unfortunately, classroom teachers and teacher educators are frequently hypercritical of educational theories and theorists. Yet, in their daily performance of their responsibilities, they rely on personal opinions and hypotheses that are frequently less substantial than current theories offered by some academicians.

When a person advances his professional competence to the level at which he realizes that the composition of his behaviors and the manner in which they are displayed in the presence of his students constitute his preliminary credentials for teaching, he has achieved one of the hallmarks of the profession.

ABSTRACT

THE FIELD-CONFERENCE: AN EXPERIMENT IN PRACTICUM FOR TEACHER EDUCATORS

by

James M. Crowner

A conference type, short term practicum is described wherein 11 Special Education teacher educators and doctoral students from three university campuses in Illinois and Missouri spent three days of intensive study of the Tucson, Arizona Special Education program. The "Field Conference" emphasized almost continuous dialogue with key administrators in the Tucson program, in addition to site visits, films and special lectures--all directed toward an understanding of administrative practices which might account for the success of the Tucson program. Special emphasis was placed on the study of the "Covert Project"--a multidisciplinary, multifaceted approach to serving disturbed children through the public schools and to the Tucson program for the mentally retarded.

The paper describes the method used in determining specific and general conference goals and details the process whereby the experience was evaluated. In a followup report, all participants, both visitors and hosts, demonstrated considerable enthusiasm for the project. The prospects for future experiences of a similar nature are outlined.

GENERAL SESSIONS

PROSPECTS FOR ADVENTURE IN SPECIAL EDUCATION

by

James J. Gallagher

I might have been addressing this convention as a President of the Council for Exceptional Children. However, in this world of ours a lot of unexpected things happen. So, instead of being CEC's President, I am addressing you as the head of the new Bureau of Education for the Handicapped in the U S Office of Education. I think you are entitled to an explanation. Certainly Leo Connor and John Kidd, who had to bear the burden of this switch, deserve a special explanation.

Looking back, I have learned much about the earlier impressions I had about Washington, and thought I might share some of these fantasies with you. Having lived in the mid west during the more recent 13 years of my life, I had a rather romantic picture of what life would be like in Washington. I knew that there would be many demands put upon me. I knew there would be lunches in the White House, constant interviews on television's Meet the Press, cocktail parties where Dean Rusk would come over and ask my opinion on foreign policy. On those few days when there weren't cocktail parties, there would be other dinners at which music lovers would sit down and listen to Senator Dirkson sing and the government workers would let out at 3:30 or 4 o'clock everyday, so that they could get to the cocktail parties on time. I found that Washington was not quite that way, but I have made the adjustment.

Bureau of Education for the Handicapped

Today, I would like to spend some time talking about the Bureau of Education for the Handicapped and what the Bureau stands for. I hope that when I am finished, I will have communicated to you sufficiently a sense of excitement about the new opportunities for handicapped children through Federal assistance.

Most of you have already received your March 1968 issue of the Exceptional Children. The entire issue is devoted to the programs of the Bureau of Education for the Handicapped. This issue describes the organization and operation in more complete detail than I could possibly do in a speech. So, I am not going to talk about organization. Rather, I am going to talk about some of our various programs. I want to take this opportunity, also, to thank Executive Secretary Bill Geer and his very fine staff in The Council for Exceptional Children for allowing us to present this total story in a single issue of the journal.

As Dr. Kirk mentioned, the Bureau as well as the National Advisory Committee on Handicapped Children was established last year. One of the major functions of the Bureau is to provide a central responsibility within the United States Office of Education to deal with all matters involving educational programs for handicapped children. The Bureau is also charged with the responsibility for providing consultation and advice to the U S Commissioner of Education on all matters relating to handicapped children.

Bureau Operations

There are currently six operating Bureaus within the Office of Education of which the Bureau of Education for the Handicapped is one. A three dimensional operation comprises the Bureau organization: Research, Training, and Services. The combined focus of these three areas of operation is to develop a blend of resources to meet the needs of tomorrow, and then the needs of the day after tomorrow.

Research. The Division of Research, directed by Dr. James Moss, had carried out an operational program for approximately three years before the unit was made a part of the Bureau. The focus of the research program has always been on the systematic application of knowledge to educational problems. While we believe that knowledge, for its own sake, is a valuable goal, it is not a major goal of the Bureau. Instead, we seek out research studies and developmental projects that give promise of strengthening all facets of education for the handicapped.

One example of these efforts is the number of reseach projects being conducted by a number of different research centers throughout the United States which are concerned with behavior modification. No one needs to tell teachers how much time they must spend in attempting to modify the inappropriate behavior of the children in their classes. We believe that some of the research now being supported definitely indicates that there are methods available which can and have substantially improved the teachers' ability to handle this behavior meaningfully. To over simplify the issue--research suggests that teachers and parents often approach behavior problems in the wrong way. They have been paying attention to the negative and ignoring the positive behavior of the child. Many teachers will ask -- what positive behavior? But as some of us know through personal experience a youngster cannot spend more than 30 percent of his time in unacceptable behavior. This means that 70 percent of his time is spent doing something which is reasonably acceptable. This research on behavior modification suggests that rewards are important to the child and should be given systematically and regularly at the time he is behaving properly. Usually we find that the teacher often breathes a sign of relief when he finally settles down for a short period of time, and she leaves him to do whatever he wishes. The only time the child gets substantial amounts of attention is when he is misbehaving. When he is showing the proper kinds of behavior that should be solidified or reinforced, the child goes unnoticed. Research studies show rather conclusively that improved behavior can be obtained by setting up the classroom environment somewhat differently, and by training teachers to assure that the child is systemically rewarded for proper behavior. This is one example of a substantial research contribution which directly aids the classroom teacher.

Another research program involves a major effort through the investment of over $2 million in the development of a network of special education instructional materials centers. Fourteen centers are now established throughout the Nation, in addition to the Clearinghouse at the Council for Exceptional Children (ERIC) in Washington, D. C., which is designed to make the latest materials and classroom techniques readily available to teachers. In addition to these fourteen centers, over 70 associate centers and six major mobile units have been set up to facilitate distribution in the various States. We have over 30,000 teachers who have registered for help and assistance through these instructional materials centers.

No one connected with this complex and difficult network pretends that it has yet fulfilled its original goals. The ways in which to communicate new ideas, to develop new materials, to transmit these materials, and to prepare the teacher to use them is still very much in the experimental stage. This is why it is considered a research effort.

We are pleased, however, that the various budget requests that have been made for the Division of Research suggest that the Administration supports this effort and is now asking Congress to appropriate $13.0 million, approximately 25 percent more money in Fiscal Year 1969 for this program than was available in Fiscal Year 1968.

I'd like to tell you of some of the brief facts of life regarding the budget. When we propose a budget, it goes through a large number of reviews. First, it is reviewed by the Office of Education; second, by the Department of Health, Education, and Welfare; third, by the Bureau of the Budget; and finally, by Appropriation Subcommittees of the House and the Senate who then go into conference and make the final decision. That final decision has not yet been made. So, the $13.9 million refers to the request made after the reviews by the Office of Education, Department of Health, Education, and Welfare, and the Bureau of the Budget.

Training. A second major and crucial dimension of our operation is concerned with the development of trained personnel. Twenty-four and a half million dollars was authorized and programed for the support of students and institutions last year for the purpose of supporting the training of 14 thousand specialists; over four thousand of whom were full time students. There is no more important task than the provision for well trained persons in any comprehensive program for the education of handicapped children.

I would like to comment on two special facets of our training program. One is the concept of program development. It has provided small sums of money to colleges and universities that wish to begin planning for the developing of new career training programs in a given area of handicapped children. A total of 269 program development grants have been given to colleges and universities, including 56 last year. Of these developmental grants that have reached a two year conclusion, we find that 183 were actually converted to full time training programs receiving support for Traineeships and Fellowships, while only 30 were not converted to training programs. This means that over 85 percent of the programs which were initially stimulated in this fashion actually came into existence. Thus, due to these program development grants, there are 183 active training programs which did not exist before.

A second point worth noting is a new dimension now being developed under the leadership of Dr. Leonard Lucito, the Director of the Division of Training Programs. This dimension is called Special Projects. In addition to the training of teachers, administrators, and others in existing programs, there is a need to offer the means by which training can be provided for new roles and additonal specialists in the total programs for handicapped children. You have heard these discussions just as I have, and we have them again in our Regional Conferences. It is this entire dimension of personnel support to be considered, with the discussion of the training of supervisors, of the people who teach trainers, the training of teacher trainers, of teachers of preschool handicapped children, child development specialists, as well as a host of other creative training concepts that have lacked the vehicle of support for a fair test. The purpose of this Special Projects Unit is to support institutions which are interested in an adventure in the development of new training roles for the handicapped. We are very pleased that the various review processes up to Congress have responded to our request for $30 million for this program for fiscal year 1969. This would represent an increase of 25 percent over the amount made available last year.

Educational Services. The third major dimension of our Bureau is concerned with the total area of educational services. One could view the research program and the training program as representing a determined attack on the problems of the handicapped for the day after tomorrow. It takes time for the benefits of these programs to reach the youngster.

But attention must also be focused on the immediate problems. This is the purpose and basic function of our Division of Educational Services under the leadership of Dr. Frank Withrow. Three major programs are involved: first is the Elementary and Secondary Education Act (ESEA) Title VI-A, Aid to the State program. All but one or two of the 50 states have now submitted state plans for establishing priorities on the basis of the growing needs of handicapped children. The available funds, $14.25 million this year, were distributed to the States roughly on a population basis. These programs would attempt to help extend and provide innovative services for the handicapped. The states have established the following priorities: (a) the multiply handicapped, (b) preschool programs, (c) work study programs and secondary programs for the handicapped, and (d) the area of specific learning disabilities.

Second is the program known as Public Law 89-313, an amendment to Title I of the ESEA, which provides assistance to over 700 State and State supported institutions throughout the United States. These institutions have improved and extended many areas such as recreation programs and curriculum provisions. In addition, they have begun preschool programs, parent counseling programs, and many others. These programs have provided assistance to institutions that many of us know have been islands in the sea of educational change.

A third major program in the area of educational services is the Captioned Films Program. Concerned initially with the area of the deaf, it has now been extended to all areas of the handicapped. The Captioned Films Program distributed materials and provides recreational films for deaf adults. One of the most interesting commitments of this program is that a certain minimal amount of audiovisual equipment has been placed in virtually every classroom for deaf children in the United States. Over 3,500 overhead projectors, screens, and filmstrip projectors have thus far been distributed to accomplish this goal. In addition, this service supports research in materials development, and training in the use of media, because if teachers are not trained to use the equipment, the equipment remains on the shelf and gathers dust.

The projected increase from 1968 to 1969 for these service programs under the education improvement for the handicapped increased from $41.7 million to $64.5 million, a request for an increase of over 50 percent.

Each of the three basic program areas hope for some increase over 1968: the educational services program, over 50 percent; the training programs and research programs, about 25 percent each.

In addition, we are responsible for four new programs which have been added by the recent Congress. We will now have authority to develop educational resource centers, deaf blind centers, physical education and recreation programs for the handicapped, and to provide information and recruitment.

It is logical that when one talks in terms of a $100 million, it sounds like a great deal of money; indeed it is. But we must remember that the Federal government is merely a junior partner in this great educational effort. About eight percent of the total amount of money spent on education in this country (eight cents of every dollar) is provided by the Federal government. A somewhat similar percentage is provided for the education of the handicapped. There are no circumstances indicated whereby the Federal government would be ready to assume the major share of that burden. What we can do is to provide you with the extra resources to test new ideas, to encourage you to try more effective training programs, and to support investigations in research and to develop more effective educational services. The major financial burden for educating handicapped children will remain, as it always has, at the local and state level.

Bureau Field Relationships

Now, what does the Bureau stand for? One of my very personal interests in coming into the Bureau of Education for the Handicapped is a deep concern about the quality of relationship that should exist between the people working in the field and in the Office of Education. There are important changes in the area of education in general, and it is crucial that we establish effective working relationships between the Office of Education and the State Departments of Education, the colleges, the universities, and the local education agencies. One of the things we are facing are projections that take education for the handicapped into the future five or ten years. The crucial questions regarding long range planning always revolve around who is doing the planning. What role does the public play? How can one obtain a meaningful degree of democratic participation in long range program development and planning which is often more suited for small group activities? The Handicapped programs within the Office of Education have always relied upon the advice and consultation of the field: the committees, panels, field readers, site visitors, and many other informal contacts. The National Advisory Committee on Handicapped Children gives us one more valuable resource in this regard.

One of the ways by which we are attempting to strengthen this new partnership this year centers on the holding of seven regional conferences, designed to develop new directions for handicapped children. Two of these conferences have already been held: one in San Francisco and one in Birmingham. We have five more which will be finished by the end of June. These are designed as working conferences in which a cross section of persons from many areas in special education, from a particular region, are invited to sit down and discuss what they believe to be the major problems that need attention to identify the kinds of obstacles that we face which keep us from solving these problems and to give us some ideas on the kinds of solutions that they see as desirable and needed in their own area.

When the results of all of these conferences are put together, we hope we will form a major policy document which represents not just the thinking of the staff of the Bureau of Education for the Handicapped, but the thinking of representative groups in the field. These tentative policy statements will then be carried forth through further dissemination at professional meetings such as the Council for Exceptional Children. Here again there are opportunities for suggestions and modification, but in the final analysis, we hope to have fully established what would represent the major problem and major solutions that we must be concerned with. These statements that we can make from the standpoint of the Bureau will be a consensus of the various professionals in the field and not a set of statements hastily composed by a few bureaucrats in Washington.

We intend to have as much face to face contact with you as possible regarding our programs on the basis that almost any problem can be met by people of good will, and also because letters and memos and written communications often do not communicate.

The point that I am really anxious to get across to you is that we in special education are all in the same boat and if someone clumsily punches a hole in the bottom, we won't have time to complain about his clumsiness, because we are all going to be too busy bailing out the boat. So, if one of us at the federal level, state level, or the local level tries too hard to peer into the future and falls out of the bell tower, ask not for whom the bell tolls; it tolls for thee.

Any good thing happening in special education, or in speech psychology, or affecting children with learning disabilities enhances us all and we all need to rejoice. We now have a real opportunity to work together and we must make the most of it.

Just last month, I accompanied the United States Commissioner of Education, Harold Howe II, to Nashville, Tennessee, where he gave a speech at the dedication of the new John F. Kennedy Center. I think you would be interested in a few words of his on that occasion, and I quote from his speech entitled "New Hope for the Handicapped."

> In providing first quality education for handicapped children, we are merely fulfilling our pledge that every American youngster shall receive as much education as he needs to give him a fair crack at a full life.
>
> After decades of ignoring the contradictions between our words and our deeds, the United States is now about the business of achieving equality of educational opportunity. We are resolved that every one of our children will have the opportunity to become all that he is capable of becoming--all of them, not just white ones, not just those from fortunate families, not just those born into educated homes. We have decided that our black children, our poor children, our Indian and our Spanish speaking children will have that same chance....that this pledge of educational opportunity includes handicapped children as well. The mentally retarded, the deaf, the blind, the brain injured--these are American children, too, and they must have the American chance. They must have the American hope --and they will get it.

We have the opportunity to work together for all areas of the handicapped. Our pledge to you also reflects the desire of the specialists in the Bureau of Education for the Handicapped to work with you to create a better education for all handicapped children.

ADDRESS TO THE FIRST GENERAL SESSION OF THE 46TH ANNUAL CONVENTION OF THE COUNCIL FOR EXCEPTIONAL CHILDREN

by

Samuel A. Kirk

When Congress amended the Elementary and Secondary Education Act by Title VI, it created two organizational structures, the Bureau for Education of Handicapped Children and a statutory National Advisory Committee on the Handicapped. These two organizations are only one year old in the United States and are relatively unique as far as the creation of administrative organizations by Congress goes.

Although we are all aware of the reasons and the need for creating a Bureau for Handicapped Children, many people ask, "Why another committee; why do we need committees at all? The simplest answer to this question is that Americans cannot live without committees. You may have heard the comment that if two Americans parachuted from a plane, they would form a committee before they landed. Administrators often find committees very useful for other reasons than their genuine interest in gaining the benefit of other points of view. When asked to make decisions they do not want to make, they may appoint a committee to study the problem, hoping that it will blow over by the time the committee completes its deliberations. Another useful function of committees is that they allow the administrator to escape the responsibility of making unpopular decisions. The committee can always be blamed. At other times, the administrator doesn't want the sole responsibility for a decision, so appoints a committee to share it. This might be dangerous since the committee may come up with decisions the administrator doesn't like. In uuch situations, the committee can be loaded with people who agree with the administrator; otherwise the committee can be troublesome.

In spite of these facetious remarks about committees, they do seem to be primarily an American phenomenon. Federal bureaus traditionally call on specialists in the field to help them with decision making. Most of the committees are appointed for a specific task such as awarding grants for research or for service. Most of the committees are created by Federal bureaus themselves as a matter of course. The National Advisory Committee that will be discussed in this paper, however, was created by Congress, and is, therefore, a statutory committee, designed to advise the Commissioner of Education, the Secretary of Health, Education, and Welfare, and the Congress of the United States concerning programs and policies related to the education of the handicapped.

The History and Work of the Office of Education and the Bureau for the Education of the Handicapped.

Before the duties of this committee are described, I would first like to discuss, briefly, the development of Federal programs for exceptional children in the United States. It might be well for us, at this time, to review historically the development of the Federal programs for the handicapped.

Up to 1931, we had few, if any, programs for handicapped children in the U S Office of Education. The White House conference of 1929 recommended that a section for exceptional children and youth be organized in the Office of Education. It was organized in 1931 and remained a section of Exceptional Children and Youth until 1963. Between 1931 and 1957, a period of 26 years, no special appropriations were made by the federal government for the education of handicapped children. In 1957, Congress took the bull by the horns and appropriated one million dollars for cooperative research. Initially, this appropriation requested that two thirds of the funds be earmarked for research on mental retardation. This earmarking lasted for only two years and at the end of that time, grants for the mentally retarded began to decrease from year to year until in 1963, they reached only five percent of the total funds appropriated for cooperative research. In other words, from 1958 to 1963, the percentage of Cooperative Research funds allocated for research on the mentally retarded dropped from 67 percent to five percent.

In 1957, Congressional appropriation ushered in a second stage in the development of Federal support for special education. In 1958, the famous Public Law 85-962 was passed appropriating one million dollars for training leadership personnel in the area of mental retardation. Then, in 1960, Public Law 85-762 was passed appropriating a million and a half dollars to train teachers of the deaf. Several other significant bills were passed such as the one supporting captioned films for the deaf. In 1963, President Kennedy signed Public Law 88-164 authorizing both training and research, not only for the mentally retarded and the deaf, but also for other handicapped children. Then, in 1964, Congress appropriated approximately 15 million dollars for research and training.

In 1963, a division for Handicapped Children and Youth was organized within the Office of Education. This raised the status of special education from a section which has lasted for nearly 30 years to a division with a number of branches to handle various aspects of the work. This division performed so well that it received a presidential citation for its accomplishments during its 18 months of life, the only such citation for any subdivision of the Office of Education in its long history.

Unfortunately, when the Office of Education was reorganized into four bureaus, the Division of Handicapped Children and Youth as well as similar divisions were abolished, and the work of its various branches was scattered among different bureaus within the Office of Education where emphasis on special education became diffused and diluted. This dispersing of the work for handicapped children within different bureaus of the Office of Education created major problems in administering a unified program. Because of these problems, in 1966 Congress created a Bureau for the Education of Handicapped Children under Title VI of the Elementary and Secondary Education Act. This was really a historical landmark, since the work in special education was elevated to the highest level within the Office of Education. It is not a section; it is not a branch; it is not a division; it is a bureau with its own divisions, branches, and sections. No longer is the work on handicapped children in the Office of Education a stepchild of education. Furthermore, it cannot again revert to the status of a stepchild except by an act of Congress. It is the only bureau in the Office of Education that is organized as a result of a Congressional Act. All other bureaus can be abolished by administrative measures, but the only way the Bureau for Education of the Handicapped can be abolished is by a repeal or amendment of Title VI of the Elementary and Secondary Education Act which created this bureau.

Hopefully, the organization of a Bureau for Education of the Handicapped has launched a new era for special education. Since 1964, Congress has continuously increased the appropriations, until this year the appropriation for all of the bills providing funds through the Office of Education for research, training, and service for handicapped children exceeds 50 million dollars. This may perhaps seem like a small appropriation for the care, education, research, and teacher training needs in an area which includes one-twelfth to one-tenth of the school population. If we, in the field, are able to justify more funds by the adequate use of existing funds at a high level accomplishment, I am certain that Congress will fulfill the commitment of our society by appropriating the further funds needed to adequately serve handicapped children.

The National Advisory Committee

So much for the history and the work of the Office of Education and the Bureau for Education of the Handicapped. To return to the original question, why did Congress also establish by law a committee to advise the Bureau? The purpose of the committee according to the Congressional Act was first to review annually the accomplishments of the Bureau for the Education of the Handicapped, second to make recommendations to the commissioner for the improvement of the bureau, and third to make recommendations to Congress through the Commissioner and the Secretary of HEW for legislation. The committee was organized in July, 1967, and met twice during that year. It has since published its annual report entitled "Special Education for Handicapped Children: Fulfillment of the Nation's Commitment." This report is currently available from the Bureau of Education of the Handicapped, in the U. S. Office of Education. For those who have not yet read this report, I would like to summarize some of its observations and recommendations.

The first task of the advisory committee was to determine the current status of the educational programs for the handicapped in the U. S. Office of Education. The second task was to develop recommendations to the Bureau and also to Congress. In its analysis of current administration of programs for the handicapped, the National Advisory Committee was impressed with certain developments.

First, it was impressed with the fact that the Bureau was inaugurated on January 12, 1967, by the Commissioner of Education, even though Congress had allowed until July 1, 1967 for its establishment. We commended the Commissioner of Education for taking immediate action six months before it was necessary in creating this bureau and getting it started.

Second, the acquisition of leadership personnel for the Bureau for Education of the Handicapped was accomplished in a very short period of time. It is not yet complete, I understand, but rapid progress has been made. The committee said that an important factor in recruitment of effective personnel for any operation (the bureau, university, or state) is based on a high sense of purpose and the dynamics of the program. We think the Bureau for the Education of the Handicapped has these characteristics in full measure.

Third, the leadership of the Bureau was commended for establishing a creative partnership with local and state services to advance the nation's programs of research, training, and service for handicapped children. Recognizing that less than half of the nation's five million handicapped children are receiving special education services, the advisory committee made certain recommendations which I should like to list for you.

First, we thought that a comprehensive examination of program needs for handicapped children in the U. S. should be conducted. We think that such a study will require a professional and technical staff under the directoon of the National Advisory Committee. Its purpose would be to help establish priorities with the goal being nothing short of quality educational services for all handicapped children and their parents.

Second, we thought that Congress should act to reduce the large gap between program authorization (the authority to spend money) and program appropriation (assignment of money to be spent) in programs for the handicapped. The authorization under Title VI of the Elementary and Secondary Education Act is 150 million dollars for 1968. The appropriation is 15 million dollars, only ten percent of the authorization. We are asking that this lag of authorization below appropriation be decreased.

We know that his is a very rich country, and that we are able to support adequately. programs for our children. As one member of the committee, I am concerned with the expenditure of funds in Asia for military purposes at the expense of adequate appropriations for the care and education of our children. We are told that we have sufficient funds for taking care of both, but as yet it has not been demonstrated by bringing appropriation up to authorization for the handicapped, for the poverty program, and for providing things that we need in this country.

Third, we thought that the Bureau for Education of the Handicapped should be provided with an adequate operating budget. The National Advisory Committee met twice. The Director of the Bureau informed us that our meetings, are at the expense of the general budget for the Bureau which is minimal for their operation.

The fourth recommendation made was that Congress should provide additional funds in research budgets for construction and operation of research and development centers that will stimulate a sustained effort in major research problems in the education of the handicapped.

The committee also pointed out that in comprehensive programs with multiple agency funding, such as model cities and neighborhood services, funds for staff representing the handicapped should be included.

The National Advisory Committee tried to delineate some of the major problems facing this country. They selected a few that we should look into and do something about.

1. Funds appropriated for research and training programs for children with learning disabilities should be substantially increased. There are no special appropriations for that program. Such additional funds necessary to define and explore this relatively new area should not be allocated at the expense of pressing program needs in established areas for the handicapped.

2. Another recommendation was that Congress should appropriate funds necessary for the development of vital programs needed for preschool education for handicapped children between the ages of three and six. This should be pursued, vigorously, since most of our research shows that we can do more for handicapped children when they are younger than we can when the children are older.

3. Research for the purpose of identifying the number, variety, and severity of handicapping conditions existing in the child population of the inner cities should be encouraged by the Bureau of the Handicapped. We think the problem of the inner cities is complex but we also know that within the inner cities we have more handicapped children than we do in the more affluent suburbs of our cities.

Another problem is that of the rural handicapped child. We have talked about the neglect of handicapped children in sparsely settled and rural areas of this country for many years, but we really haven't done very much about it. We have not yet used modern developments such as helicopters to transport children to teachers or teachers to children. We haven't used the modern communication techniques of television and the other electronics aids in rural areas. It is necessary for us not only to talk about the neglect of handicapped children in rural areas, but to come up with procedures that will implement our desires.

The committee was very pleased with the functioning of the six regional conferences the Bureau has sponsored. These conferences are designed to foster a partnership between professional people in the field and the Federal Bureau. The National Advisory Committee will study very thoroughly, the ideas and suggestions from the field that will lead to more adequate research, training, and services to handicapped children and will assist in their implementation. The major goal for all of us is to fulfill the nation's commitment to its handicapped children.

REFLECTIONS ON THE YEAR 2000

by

Leo E. Connor

Once upon a time a President of CEC told the story of special education in the following way:

"In the beginning of special education was the handicapped child and the child was with his parents. Then came the special teacher and the teacher saw the child and the teacher took the child unto his own and the parent knew the child no longer. All things belonged to the teacher and the school. Then came the technologies and the clinicians and the diagnosticians and the teacher knew not the child. All good ideas were created by the researchers and the universities could do no wrong. And then, the Federal Government assumed all wisdom unto itself. Next, we see the states rising and taking onto themselves such power they never had. Through all time, we have had the doubters and the skeptics with us. But, in this our day, we stand amazed and confounded that all these too might pass and leave us with a new future yet to be determined (Connor, 1968)."

To look into the future is to claim the title of prophet; to look toward the future can tag one with the epitaph of visionary; to assert validity for one's predictions invites skepticism and reactions; to act upon one's vision assures one of disciples and opponents. But, to talk about the future does harm to no one, for many of you have heard the definition of the future as a discussion of the unknown, in uncertain terms, for imprecise reasons, by pompous individuals who have little to do in the present.

Yet, Yeat once said, "In dreams begin responsibilities," and the American Academy of Arts and Sciences, a respected body of scholars, is currently devoting a huge expenditure of brains, time, and energy to defining the alternatives facing us in the 21st century. Kahn and Wiener's book (1967) is simply titled The Year 2000, and is replete with responsible, sober, and cautious possibilities. Such endeavors are esteemed examples to emulate and, for what it is worth, this is my presidential offering with the shaping of present thoughts toward the potential of special education.

There is a great deal of magic in the name of the year 2000! One-half to three-fourths of you will celebrate New Year's Eve of the year 1999 and watch the 21st century begin. What will you expect? Will you stand and watch the robot butler wheel across the room and let you punch the right buttons on his chest so that your drink can be served? Will you expect to pop the day's food intake pill into your mouth with the dialed drink and thus avoid wasting time at three meals? Will you expect your clothes to be made of paper, or seaweed, or some strange new substance? Or perhaps you'll have no clothes on at all and instead be clothed in a shower of lights that change color and shape constantly. Or another aspect of the year 2000 might be your wish to go home and visit your family for the New Year, and so you'll adjust your flying belt, jet out to the spaceport, and take off from your home on Mars to see your parents on earth.

Are these gadgets and inventions impossible to dream of? Not altogether, and it certainly would be fun to continue to speculate upon the extraordinary items which might become commonplace within the future of our lifetime. I have no desire to promise you a specific discovery on the education of exceptional children or a group of easier working conditions. Rather than compete with other prophets and predictors of scientific marvels, I'd like to concentrate on special education and the outline of its possible alternatives.

CEC Activities

What of CEC in the year 2000? My response is that the CEC of 1968 is more like the CEC of 2000 than most CEC'ers would think. Why? I present three major premises:

1. There is more happening in CEC than the majority of CEC'ers realize. During the past ten years, the CEC had a major revision of the constitution which has set us on the pathway to our current and future objectives. We now have 38 federations, 555 local chapters, and 9 Divisions. At the present rate of expansion and organizational progress, both the United States and Canada will be saturated with federations between 1980 and 1985. Local chapters, of

course, can be organized by 15 or more members, so there is no telling what their number will be by 2000. But, will the pattern of local chapters be changed? I doubt it. They could be abolished or so changed that there are no longer local groups of special education. Neither contingency seems very likely.

What about divisions? Well, what can 2000 bring? Do you know anything that's been left out? Since a Division for the Learning Disabilities has been confirmed, most special educators would say that few handicapped children remain to be highlighted. But even so, we stand ready to receive any kind of exceptional child. On the other hand, divisions could be planned around professional groups such as the psychologists with interest in special education; likewise with the medical doctors or the nursing group or physical therapists, etc. None of this is startling or unknown to us in 1969.

Membership? There is nothing astonishing or new concerning membership except that our predictions always turn out to be too low. In 1960, an official CEC study predicted that 1970 would see 30,000 members. In 1968, we are over 36,000 and undoubtedly will go over 45,000 by 1970. By 1980, we could have 60,000 members and perhaps 100,000 by the year 2000. No surprises there--only more members, more services, more dues.

2. My second premise against surprises in 2000 is that CEC is now a really big organization and its trends and members are a complex reality which will not be easily changed in any unusual direction. Institutional organizations like CEC are evolved and not revolutioned. CEC now has established a committee of distinguished CEC'ers who are committed to fashioning a plan of long term goals for the Council. Will their plans and objectives for the 1980's be very different from the present? How could they be, when our ideas are posited upon prior trends--or, as we would say it in the education of the deaf, the deaf child can only speak or lipread the words he already knows and that have become a known reality to him.

   CEC now has an Educational Policies Committee which seeks to write, and present for adoption by the Council, official positions on major topics in special education. Thus we may have, within a few years, statements on the place of the gifted in special education, or desirable administrative patterns, or a rationale for effective financing at the local, intermediate, and national levels. These Council activities seek to insure evolution and to avoid the need for revolution.

3. Thirdly, CEC is a social organization of professionals dedicated to a service function. It is unlikely that many or all of the ingredients in this type of "soup" will change radically within the next 30 years. Handicapped and gifted children--these you will always have with you! Teachers, supervisors, administrators, and researchers--they may be renamed educationists or clinicals or prescriptors or diagnosticians or team members or programers or the machine, but somehow all of them will survive.

   However, you exclaim, the trends today are too strong to be resisted. We will eventually have machines that teach, educational consoles for each home, resource centers instead of schools, and chemicals that sharpen memory and improve learning; we might even have, by the year 2000, prenatal determination of genes and characteristics of intelligence. My response here is in two parts: First, Human beings tend to resist, obstruct, and reverse trends that are costly, uncomfortable, or innovative. Thus, I believe that not all of the potential easy answer miracles will solve our gritty problems. The kind of education a deaf child receives may be different, but the deaf child will be there in 2000 A.D. and so will our desires to do the job better than before. Second, in recent history for every step forward in exploring and controlling life processes, there seems to have been a corresponding residue of side effects or handicapping conditions. One example: for the benefits of the antibiotic drugs, we have paid the price of a greater incidence of living, damaged youngsters with perceptual and communicative problems.

For CEC in 2000 A.D., I predict a Canadian CEC and a United States CEC which will stand forth as separate entities, bigger than ever and more influential; a few extra journals; expanded staff and services; extensive consultative activities; regional offices in the Northeast, Northwest, Southeast, Southwest, central states, and perhaps Mars; divisions and sections of the Council to serve whatever the groups of handicapped and gifted children are called in those days; research studies and demonstration projects concerned with administrative problems, new classifications, and the preparation of personnel; and perhaps even a computer taught course piped into every college and university in the country on the education of the exceptional child.

Special Education

At this point, I want to turn from CEC in particular and discuss the present and future of special education in general. The major conclusion that one reaches when one tries seriously and at length to evaluate, to predict, and possibly to control the future, is the overriding lesson that it is impossible to entirely understand future patterns and to voice the long term consequences of alternative policies. Thus, humans usually fall back on their native conservatism and try to moderate headlong trends--they seek to decrease reliance upon unknown factors beyond their control. As Kahn and Weiner (1967) put it,

> What is necessary is an unfailing respect for the world as we find it and for dissent and diversity, even for ornery individual stubbornness . . . above all, there must be a concern for perpetuating those institutions that protect freedom of human choice (p. 413).

Five credos make up my consideration of the year 2000 for special education. Where some of us think "unthinkable thoughts" and others desire "reevaluations" and "revolutions," I have these beliefs that might enliven and perhaps ennoble the years that lie ahead.

Credo #1: Special education has need of philosophers and scholars who are interested in explaining the self or "esse" of special education. Why do we exist and why are we what we are in our professional endeavors? The definition of special education most often given is the familiar phrase about accepting children unable to fit into the regular school program. This is a negative and self defeating set of concepts which should be buried in oblivion and replaced by universally held action objectives. Not "What is special about special education?" is a worthy question that could save us many a false step into the learning disabilities or the field of the culturally deprived or the trainable areas-if these are really false steps. Under the present concept, we have no right to reject or rule out anything from special education's orbit of endeavors. Even more limiting, we do not know who we are. Thus, the first objective is to stimulate and stretch the imagination of special educators and improve our perspective about ourselves. To paraphrase Joseph Krutch (1968), "The quality of life in whatever special education is--that is precisely what seems to be almost entirely left out of consideration in many prophecies (p. 14)."

Credo #2: Special education must be studied, evaluated, and conceptualized as a totality--as a major entity--as a unifying concept. By and large, special education and the special educators at the university levels in particular have been content with the advancement in knowledge which comes with the advancement in knowledge which comes from the processing of small pieces of information. Special educators have not been ambitious enough to study special education as a totality. How many scholars can you name who have studied or written about special education as a subject? At the present it seems that we fear to deal with the complexity of special education; because of the lack of a complex vocabulary, we are not capable of making the complex inferences, we do not possess the complex instruments of analysis and evaluation, and we are afraid of dealing with the necessarily complex predictions. As has been said rather aptly, "We are using salt spoons to clear away snow drifts and reading glasses to study the structures of molecules (Krutch, 1968, p. 14)."

Credo #3: Our major endeavor in the exploration of special education's future should be to clarify, define, expound, and argue major issues. The argument aspect of major issues we do rather well; when it comes to definitions and clarifications about issues, we act in a different fashion. For example, can you name the ten most critical, current issues in special education? I didn't say name ten current trends, but issues! For example, learning disabilities! Is it a trend or an issue? If it's an issue, why is it so? Can you define this subject, define its problem aspects, define its history and relationships, define its direct effects and its future implications? When you do all that for the learning disabilities, you are beginning to clarify one major issue in the field of special education. When you have convinced a significant group of CEC'ers and public power groups that your analysis makes some sense, then you are beginning to achieve my third credo for charting the future course of special education.

Credo #4: Special education must clarify currently realistic policy choices, and improve the ability of policy makers to react to the unfamiliar or the difficult. In administrative circles several years ago, one of the central themes of the administrative process was decision making by the leaders no matter whether their titles were supervisor, chairman, professor, principal, or superintendent. There was much speculation that when a mature human being was capable of sorting through a maze of details to arrive at an answer that sounded sensible to the majority of the faculty, board, parents, and public, then that individual had the central skill of an effective administrator. There was a lot of truth in that proposition. For special education enterprises, be they research, curriculum, college teaching, or state leadership, the key person sitting in the center of most things remains the boss or head of that particular program. The basic question of how we get better administrators in special education has not had its surface scratched.

A popular type of seminar game in university administration courses is to outline the personality and management characteristics of the leadership that may be required in the twenty-first century. Thus, we have the man, the job, and the setting analyses which add up to the need for a special education enterprise to serve exceptional children and to provide community satisfactions. Another model creates the image of management which has a minimum of restraints and a maximum of acceptance of its objectives by the people within it. Another fashionable method of expressing the concern for future leadership is to describe the younger, critical generation members as disruptive, irreverent, and rebellious, and then to state that they must not be alienated for their behaviors but should be absorbed into the organization by some wave of a magic wand.

It remains a truism that leadership plays a key role in any social enterprise, including special education. But the production of creative, responsible, and effective leaders is as great a mystery in 1968 as it was in 1928 or, indeed, might remain in 1998. Were we in special education to solve the problem of how to produce superior leadership for our enterprises, then we might well be on the road to vastly different programs by 2000 A.D.

May I present a public plea to the Office of Education, to the state department of education, and to the universities to work out some better ways of producing special education administrators? Every teacher will thank you for a generation to come--and beyond 2000 A.D.--if you but give to each local district and residential school a special education administrator who can clarify realistic policy choices and improve his or her ability to react to the unfamiliar and the difficult.

Credo #5: We must generate and document conclusions, recommendations, and desirable trends. In special education we now have our state plans, our Title I projects, our research reports (with abstracts), our Title III evaluations, our self study recommendations, our teacher checklists, and our graduate students' ratings of professors. The Western World has turned from a race of pioneers and rugged individualists into nations of committeemen, pen pushers, computers, and publish conscious egotists. The future danger for special education is that committee reports will become museum pieces and that desirable trends will wither by the wayside because no one knows how to jump on a bandwagon. An example to the point lies in a publication like the Professional Standards for Personnel in the Education of Exceptional Children (The Council for Exceptional Children, 1966). After three long hard years of effort by distinguished committees and critical conferences, this compilation of desirable trends and recommended standards has yet to be applied in any serious way by the overwhelming majority of special educators. By 2000 A.D., it could be in its seventh revision and still be unused by state certification agencies, colleges, and universities or by national accrediting bodies.

Another approach to the problems of the future in special education is to say that one overall psychology or meaning should be accepted for the reality around us and that the future must be visualized in its terms only. The inherent danger here is the acceptance of only one description of the future and the failure to allow a range of more generalized goals. Our model should rather be the psychiatrist who does not allow himself to see the world through the eyes of his patient, but keeps his own professional analysis on a different plane of scrutiny, feedback, and reevaluation. A most contemporary example of accepting premises and then being caught up in their consequences is the current discussion regarding "the chemistry of learning." Under this approach educators are promised "enzyme assisted instruction, protein memory consolidators, and antibiotic memory repellers (Krutch, 1968, p. 14)." Thus, teachers need no longer worry about becoming computers; we are all going to be turned into pharmacists.

I would submit to you that most past advances in the social sciences have come from the hands of practitioners rather than from the conclusions of researchers. The worlds of reflection and of action cannot, in reality, be divided, but unfortunately a dichotomy has sprung up. University instructors must not "communicate to their students a moral snobbism toward those who live with the ethical dilemmas of responsible action." Neither must the actionists among us resent and repell the scholar, the critic, the writer, or the rationalist.

Special education has urgent need of its scholars and its poets. Perhaps some of you will say that we now have greater need for them than for executives. But, in the long run, it will be the administrators and the teachers who must put special education into effect, who must turn theory into practice and make of today's exceptional children the better, mature citizens of tomorrow. If we cannot look forward in 2000 A.D. toward improving our pupils' educational achievement, then there will not be much use in our working so hard, or much satisfaction and fun in trying.

The worst that can be said about special education is that most of its practitioners and researchers have never wondered about its future. We are so proud of our pragmatic stance, of our growth curve, of our grants and titles, and we are so busy tearing down present classifications or putting our names on articles and studies, that we don't even wonder how it will all turn out. In many ways, special education lacks an adequate vision of its future. And yet, as a social science and as social scientists, we must be aware that we are a part of the system which should be studied. As participants and observers we are analyzing and creating the world in which we must work. Our knowledge of the special education field will change that work as we know it better, as we examine it more efficiently, and as we examine it from new directions. As a field of study we must delineate the value system in special education. The resulting ethical and moral standards should make us take our work more seriously in achieving a stable niche in the framework of the future of our social system.

Special education must gain political and economic power which fits the governmental structure of our present and future times. If special education is to endure, it must be flexibly contemporary, not only in our own journals but in the vocabulary and thoughts of the community; it must relate to every strata of the Great Society and the political and social trends of the future governmental regimes.

I hope that this wondering about special education's future will be spiced liberally with the tangy tastes of power, influence, values, and unorthodox opinions. It may be true that there is nothing stronger than an idea which has reached its time, but it is also true that there is nothing deader than an idea which is still around after its time.

Within this article will be found a variety of procedures to wring out from the year 2000 A.D. some of its secrets. Yet little specific can be expected. Rather, facts and trends can be displayed to explore the possibilities inherent in tendencies present in contemporary special education. Some trends can be reversed or distracted just as the economist does not try to control business growth but rather to curb depressions and inflationary periods. Special education likewise cannot aspire to control the future but rather to curb its negative excesses and encourage its positive movements.

My Predictions

And so, we finally come to my predictions about the year 2000 A.D. What kind of a world will it be? And what will these predictions mean for special education?

1. I predict that the world of 2000 A.D. will look much like ours in 1968 because, no matter what technological changes will be made, the human beings who inhabit this planet are far too complex and the western world too socially stable to change radically. Many specifics of our coming lifetime may be unusual or altered, but the basic human problems will remain: where to live, what to eat, the struggle for suitable living standards, the shifting of political institutional aims, and the betterment of health.

2. The world of 2000 A.D. will have forced us all to live closer together while we move around more, to work cooperatively on common problems and at the same time to carve out for each individual his private niches of pride, interests, and achievements.

3. The world of 2000 A.D. will intensify the centralization of governmental support and programs to the point that individuals and local groups working for a common purpose will find it necessary to ally themselves with countrywide organizations in order to reach their objectives and adequately share in the national resources.

4. The world of 2000 A.D. will witness the increasing power of mankind to control his physical environment, while the complexity of social interactions will make us increasingly uneasy as we struggle to understand the responsibilities and the control of these advances.

5. The world of 2000 A.D. will appear even more a world of the young in spirit, and, while its pace and complexities may be accelerated, the greater knowledge and broader human endeavors will force the serious minded to spend longer periods in study, reflection, and research.

For special education, all of this should add up to a greater struggle for mastery of its own world--but with more effective weapons, greater satisfactions, more tangible gains, better instruction, more effective evaluations, tighter teamwork, saner diagnoses, perceptive teachers, insightful supervisors, decisive administrators, revolutionizing researchers, and exhilarating professors. Literally, I mean that the seeding and the tilling will be more difficult but the harvesting should be more bountiful and satisfactory.

Whether the future of special education changes most because of research or chemistry or technology or methodology or teachers' insights, it is bound to change radically in its outward garb. Perhaps in three ways the special education of 2000 A.D. will look different:

1. The special education classroom will probably resemble the language laboratories of today. Desk consoles, study carrels, screens, and buttons--these individualized teaching learning materials will crowd our rooms the way blackboards, desks, and windows do in the schoolrooms of 1968.

2. The teacher's words, movements, and planning of 2000 A.D. will be more and more directed toward the individual child. The class members may be scattered around the school and many of them may be at home or in a hospital. Teacher pupil rapport will be as firm as in 1968, but perhaps will not occur in the physical proximity of the same room.

3. A significant group of special educators at the local, state, and national levels will be preparing materials for future use in classrooms with handicapped pupils or in college instructional areas for prospective teachers. This educational activity of 2000 A.D. will be the logical extension of our 1968 ERIC and programing work. But instead of being a part time or incidental outgrowth of teacher made materials, the preparation of the software will be recognized as vital, full time, and basic to any curriculum or instructional enterprise. As much as 20 to 30 percent of a local district's budget will be spent on personnel endeavors to give the master teacher an array of programed materials and assistants that can extend his or her master skills to many times the number of handicapped pupils currently served by one teacher.

In several ways also the special education teacher may be different. Tapes, screens, records, and other technological devices, together with the computer, will make possible a variety of instructional approaches using unique sight, sound, and touch possibilities. The teacher, therefore, for 50 percent of the child's school day or week, may be a computer and not a human being. On the same theme, the person who is a teacher will have absorbed in a center of teacher education such courses or knowledge as computer math, programing, systems design, cybernation, drug therapy, and the sociology of leisure.

Another difference in the world of 2000 A.D. will present the teacher as the leader of a team of specialists. Around each master taacher will cluster several programers, a curriculum technician or two, a learning psychologist, a language specialist, two or three assistant or junior teachers, three or four volunteers to take individual pupils on trips or to care for their physical and emotional needs, a videotape crew to record daily learning happenings, and a planner to lay out the next day's and next week's programs for pupils and team members.

All of this "stuff" of the year 2000 A.D. will not change the basic ingredients of teacher learner but it will actualize the two basic objectives of the school process even more effectively; First, it will bring the energy and ingenuity of a specialized group of people directly into focus upon that irreducible unit of one learner and a teacher, human or nonhuman, and, secondly, it will complicate the preparation programs of teachers to an unlimited degree and make a few master teachers (on our Ph.D. level of today) the effective and widely influential leaders who might be responsible for hundreds of pupils at once in many localities.

Conclusion

In whatever words we say it, the conclusion on this topic must be the same: "The future is what you make of it." Kahn and Wiener (1967) phrase it this way:

> Of course, it will be worthwhile to try to improve our understanding of future possibilities and the long term consequences of alternative policies. But the problem is ultimately too difficult, and these efforts can never be entirely successful. . . (thus) there must be a certain for perpetuating those institutions that protect freedom of human choice--not only for today's individuals. . . but for those who will follow us (p. 413).

The future of special education should be a bright one as we can see it now. The recent stimulation of federal leadership through its varied programs, the technological explosion, and the increased financial resources available to our field all portend increased productivity and diversity of professional efforts. Effective programs have a way of surviving over the decades; surface rooted trends usually evaporate after a few years' exposure.

With our hopes high and our faith based on the foundation of past exploits for the exceptional child, special education looks toward the year 2000 A.D. and says, "Let it come!"

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PRESIDENT'S DINNER ADDRESS

by

Jacob Javits

Thank you very much Dr. Connor, for your gracious introduction, and thank you ladies and gentlemen, for your warm reception which I appreciate both for myself and for Roy Millenson--my right arm--who, as a legislative assistant, has for many years been concerned with the varied problems to which Dr. Connor referred.

I would like to pay my respects to Msor. Dulin, Rev. Young, Dr. Kidd, your president elect, to Ray Simches, who is Director of the Bureau for the Physically handicapped of the New York State Department of Education, and to Dr. Helen Donovan, here for New York.

I have a deep feeling for the work you do, and before launching to the formal part of my address, I would like to talk for a minute about the privilege given me by Dr.Leo Connor of speaking at the commencement of the Lexington School for the Deaf. I've rarely in my life been so moved. First, I spoke, and the children who were deaf listened, and they understood. I am an experienced speaker, and I can feel when an audience is understanding and following every word, with not only the ability to comprehend it, but with the ability to feel and understand it. Then, one of the deaf children made the valedictory speech. The labor it took to teach a child who cannot hear sound to speak so articulately and so feelingly impressed me greatly. I do not tell you this to inspire wonder or amazement--you certainly know it all much better than I do--but to emphasize what you mean to our time. It is a time of great danger. It is a time of great destruction, not only of life and property, but of values. We don't know yet which way the world will go. We are religious and, therefore, we believe that it will have a living destiny of happiness, but there is no assurance of it so far in the affairs of mankind or in the relations between nations, or in the ability of the rule of law to overtake the rule of force. And so, it is a dangerous world. But at the same time, this is also a tremendously developing, expanding, and unfolding world, and perhaps you yourselves do not realize the part you play in it. Aside from adventures in science, technology, space, and in health, housing, and education, and in almost every other field, there is a tremendous expansion of the willingness of individuals to devote themselves to the mining of the human personality--which is what you are doing--in order to make life more fruitful, more beautiful, and more productive. You are mining veins of the human personality which were neglected completely for thousands of years. This, to me, is the miracle that is epitmomized by your profession.

You know, we work hard in the Congress. Our distinguished committee counsel Jack Forsythe, and his wife, Pat, are here, and are deeply dedicated to the things you do. He has the top position with the majority on our Senate Labor and Public Welfare Committee and is of indispensible help to you. They can tell you that we work very hard, but we too often miss the forest for the trees until we actually look into the faces of some of the people whom you are animating and to whom you are giving tools for self development, and until we see the expanding horizons of those people whom we will establish as productive and useful citizens.

You said, Dr. Connor, that I am the Republican friend of CEC. You also have a great Democratic friend--our chairman, Senator Hill, who has dedicated his life to the advancement and enlargement of the opportunities for this kind of education, and you have other friends on the committee--Senator Morse, Senator Yarborough, Senator Clark, and both Kennedys. In our committee, there is a great devotion on both sides of the aisle. We may differ about means, but never about objectives or about dedication to the purpose for which we act. I know I represent every one of my collegues in telling you that we do understand, that we do appreciate, and that we are sensitive to the degree of your dedication and to the results of your mission, for which we have had the privilege of giving you some of the tools which represent the opportunity for you to do even more.

Health Crisis

Although I have to get back to Washington tonight, and do not wish to trespass unduly on your time, I want to talk with you about something that concerns all of us: the great crisis which we face on the economic aspects of health. Unfortunately, the people who are bearing the burden of the health crisis are those who can afford it least--the poor in our central cities and in remote rural areas.

Even worse, one-third of our nation's hospital capacity is outmoded and obsolete. This not only impairs the quality of care, but adds to rapidly accelerating health costs, limits medical education and hospital centered research, and affects the supply of needed personnel. We are told by a survey conducted by the Columbia School of Public Health that 43 percent of our 5,200 general hospitals provide care that is only "poor to fair." For the State of New York, the Associate Commissioner of Health of the State Department of Health, says that three fourths of New York City's municipal hospitals are obsolete. Only 17 percent of New York's hospitals would probably pass the public health standards on fire protection.

In addition, we have a national shortage of 50,000 physicians, and 5,000 American communities have no doctor at all. Not only do we have a deficiency in the number of physicians, but the proportion of family physicians and dentists in relation to the population is declining. This shortage even affects states with a high proportion of physicians, for example, New York and Massachusetts, which have 200 doctors for every 100,000 people. But even in physician prosperous New York, there is a tremendous paucity in the rural and in the ghetto areas; that is why we are doing our utmost to give certain special benefits to attract doctors who will move into those areas.

Also--and here I speak from the vantage point of membership on the Joint Economic Committee--one of the big aspects of inflation and the increase in the cost of living is health services costs, which are rising twice as fast as the cost of living, and which add to the difficulties caused by shortages of personnel and by inadequate facilities.

The problem really has been that our national priorities are not adjusted to this situation, and, hence, the tendency has been to put off ending solutions to the problem. For instance, in 1966, in his health message to the Congress, the President said that one third of the nation's hospital capacity is obsolete and he asked us for a ten year, $10 billion program to deal with this urgent need.

When Congress failed to act on the Administration's bill, the President in his 1967 Health Message indicated he was appointing a National Advisory Commission on Health Facilities to study the issue and make recommendations. And this year, in his 1968 Health Message to the Congress, the President was silent on the subject. In three years the nation went from a call for major action, to a request for a study, to silence.

But that isn't all. For the current year, Congress appropriated $280 million for the Hill-Burton Act, which includes hospital modernization as well as new construction. But, the President's budget submitted in January reveals a requested cut of $26 million in even this amount. So, we degenerate still further --from silence, to cutting back on the inadequate efforts we are making.

Time may well be a healer but time will not heal outmoded hospital facilities nor cure mounting costs. Inaction, delays, and repetitive surveys must not be our reaction to the health crisis. Delays are costly. For example, each year we delay filling the $1 billion annual need in hospital modernization, rising construction costs add another $70 million to the bill, a charge which is eventually passed on to hospital users and local and Federal taxpayers. And each year of delay means that some American is short changed on health care.

At the Federal level, I am pressing for Congressional approval of my own bill, the Hospital Modernization and Improvement Act, which, at a relatively modest $49 million annual cost, will provide needed hospital modernization and also the development of new techniques in hospital procedures and construction. The idea is to use the resources of the private enterprise system by making available Federal guarantees of up to 90 percent for loans for hospital modernization and to provide Federal payments of interest charges above 2 percent. This loan quarantee, interest subsidy plan is the key to moving forward in providing health services regardless of the other demands of the Federal Government.

Health Personnel

In his March 4th Health Message to the Congress, the President noted the critical shortage of health personnel.

At the nongovernment level, the American Association of Medical Colleges reports that "every academic medical center in the United States is in trouble financially, and some are in desperate straits." Already, two Midwestern medical schools have notified the Department of Health, Education, and Welfare that they are going to close, and we understand that a third one is also in some difficulty.

There is a good deal of legislation already on statute books to deal with this problem. The difficulty is that it is not being implemented with money. Congress now has before it the Health Manpower Act, an excellent bill to strenghthen and extend these programs, but again, the difficulty is money. For example, for the current fiscal year, the Administration is leaving unspent one third ($67 million) of the $203 million appropriated by Congress for health teaching facilities. Health manpower programs are faced with a 26 percent budget cut; $382.7 million was appropriated for this year and the fiscal year 1969 request is $282.4 million. As part of this cut construction of health educational facilities is cut back 58 percent.

Now, I realize that these cuts in health education are being matched by those elsewhere in education. For example, in the educational field, some budget requests are less than 50 percent of the amount which is authorized. For the current fiscal year, $154, millionis authorized for Title VI of the Elementary and Secondary Education Act but $15 million was all that was appropriated for the handicapped. Appropriating only ten percent of the authorization is a shocking situation, and indeed the administration is not even going to spend all of the $15 million.

We cannot meet present and future medical care needs while there are such serious shortages of facilities and personnel by hiding behind the thickness of the national budget. Inadequate colleges and insufficient enrollments today mean that we will be short of doctors, nurses, and other health professionals tomorrow; just as postponement of essential health hospital modernization and construction will result in more shortages and will cost more money because of the increase in costs. Should the increased expenditures necessary to safeguard the nation's health require additional taxation and cutbacks in other less essential categories, such as public works, or space, or some of the defense budget not related to the Viet Nam war; then we must go ahead with it; we must also be prepared to tax ourselves.

One other thing we should remember is that the potential for support of what we are doing through private and coorperate giving is not being fully realized. Probably not better than one fifth or one sixth of the amount which individuals and corporations can deduct from their income taxes an in making voluntary contributions is being utilized in that way. This affords an enormous theatre for the activities of those who manage the institutions in which many of you work.

The task is not entirely one for the Federal Government. The states also have a key role. I have been trying to encourage the states to fill that role by providing federal matching funds for increases in state programs so states will be motivated to broaden their existing programs and to inaugurate new ones. Federal health manpower efforts must be keyed to local and state efforts so as to maximize their effectiveness.

Emphasizing the importance of local responsibility is also necessary in order to affect the situation of nurses in this country. The Lent Report states that the "single most important health problem in New York State and the nation is how to increase the number of professional registered nurses." Or, as Surgeon General William Stewart put it so succinctly: "Our nurses are undermanned." Yet, nurses receive on the average a little over $5,200 annually which compares unfavorably with the average factory worker's wage of $5,975 a year. It has been said of the nurse that "she must feel like a girl, act like a lady, think like a man, and work like a dog." Let us add to that, "and be paid like a member of an honored and skilled profession."

So our work, those of us in the Congress and those of us in the rest of the country, is cut out for us if we are to do the things which need to be done in order to meet our responsibility to the people of this nation.

Modernization

A great deal can be done to modernize every aspect of the nation's health care through science, technology, and research. This does not mean that hospitals have to be run the same way that they are today, or that every hospital has to have the complete equipment in many cases that it seeks to have today as if there were no other institution upon which it could lean and with which it could coordinate. There are unbelievable possibilities in the pooling of services, the pooling of facilities, and in the establishment of greater efficiency and management in operation. Indeed, this kind of cooperation is one way in which the problem can be approached rather than by relying solely upon the more expensive and painful way of increasing our expenditures and trying to find the money from contributions or from the government.

Conclusion

In conclusion, we must realize that this is an age of crises. I have spoken of the health crisis. But it is also an age in which the means by which we can meet crises was never greater and in which the resources which mankind is ready to devote to the solution of crises is at nearly the highest peak that it has ever been.

As a public official, I hear time and time again that we are getting rooted in error, that it is very difficult and frustrating to move and to change, and that the opportunities for the individual are deadened and frustrated by the size and complexity of our society. With all respect to that opinion, I cannot agree. We are still a young, a vital, and a vigorous nation. There may be a different frame of reference for the kinds of actions we can take toward self-improvement and the improvement of the conditions of others in our society, but there are many persons, such as yourselves, whose ideas and dedication have made enormous contributions toward the vitality of this nation, which is characterized by your work. We must remember that we are young; our whole society is young. We still remain the hope of mankind and ours is still the revolution that inspires the rest of the world.

HOW SPECIAL CAN SPECIAL EDUCATION BECOME ?

by

Elizabeth Koontz

Introduction

Thank you Dr Willenburg. Perhaps more than feeling honored at addressing this assembly, I am pleased to be able to attend the national convention of the Council for Exceptional Children, and I am especially happy to see one of my former instructors, Dr. Mildred Turner Barksdale.

It would seem from the daily news in most of the papers that this whole country considers education to be vitally important and to be one of its priorities. However, not all of the country looks upon education as a priority, simply because of what must be contributed to its support, but there are those who make it a priority because of their opposition to the teacher unrest. I am not unhappy with teacher unrest and increased militancy. I think it is a healthy sign that teachers are still concerned about what happens to education of children and adults.

However, this concern is like all other good purposes. It, too, is often accompanied by elements that we wish were not present, but which must be seen in perspective. If there is any single thing that special educators must do, it is to keep before this nation the importance of education for all children.

As everyone has also heard in the news and seen on television, bond issues and referendums, efforts to change, are being voted down by communities. So, one cannot be sure that this nation really places a high value on education generally. Those who consider education very important have to stop and wonder what the course should be, what the direction is, and what the focus should be.

Each of us has probably had his turn considering giving up work in this special area of education. Certainly, the amount of training and skill that you possess is needed in many, many other fields. There are, no doubt, many offers made to you because of your knowledge of human nature, offers to leave your post and your specialty to go into some other channel; but somehow most of us seem to come back to the realization that these children need us.

I recall that when I was on leave as President of the NEA Department of Classroom Teachers, one of my big concerns was what would happen to my students. I just knew that they were going to suffer miserably! I knew that they wouldn't learn a single thing, and as a matter of fact, that they would likely regress! But when I visited the school and saw my children coming down the hallway from Assembly, only one person casually turned and gave a feeble little wave. No one was in tears; nobody broke out and ran to me to tell me how unhappy he was or how mistreated he felt, or how his education had suffered!

So I faced one of the truths: when children have good teachers, the individual himself does not matter so much if the personality, the concern, and the caring about the children as individuals are there. This is wonderful; sometimes we get wrapped up in thinking of education as OURS and fail to remember that education is for the students.

It took me quite a number of years to face my moment of truth that what I must be prepared to offer students is a good teacher whenever I am away so that their education is not interrupted.

I mention this because I think all of us need a good look at where we've been, at where we are, and where we might be going. For every state, school district, county, or region we can count, there have been notices saying that we've done fairly well in this business of education. But sometimes these very words are in indictment. They imply that because we've done well, we don't need anything more in order to keep doing well. This willingness to try to do well inspite of the odds has militated against us in our efforts to gain increased support of education. The idea that "all a good teacher needs to teach these children is a warm body, some play things, and dedication," and the idea that we all have that "superman element" or that "motherly instinct" that can always be counted on are ideas not appreciated by special educators. Those who are trained in the work know that teachers cannot simply "mother" children, cannot be simply "dedicated women or men." That image is changing, as we realize when we assess where we have been, who we are, and where we are going.

It is for this reason that I have selected the topic, "How Special Can Special Education Become?" Think of your own system, whether you are in the field of services provided by a locality, by a state, or by a federal government, whether you are in the private or public sector, whether you are employed or a volunteer, whether you are a director, a teacher, a specialist, an aide, or whether you are in the educational arena or the medical--no matter what your specialty might be, just think for a few minutes about how special special education can become.

History of Special Education

In the past, very little attention was given to the handicapped. Those who could afford it put the child into a nursing home, far away from the family where nobody would know. We now sometimes speak of this period as the dark ages. Sometimes there were those who were gifted and "just a little bit queer," people said, and they were often estranged from society because of their unusual insight into a world that was not yet commonplace.

I often think of the dark ages described in the book, "The Snake Pit," as a classic example of how far we have come, and yet, behind our private doors, there are still "snake pits," that do not allow children who can learn an opportunity to do so. As one searches history on the care of the handicapped, he is likely to be surprised at how long these conditions have prevailed even in some enlightened communities. And if one reads about any section of the country, he will find in sections of states some absolute horror stories about present day treatment of physical and mental defects. If one visits schools across the nation, he will find even today conditions that resemble the dark ages.

What does this mean to special educators? It seems to indicate that the evidence, the research data, the medical research now being undertaken, and the predictions being made are not reaching the public; they are not reaching those who can affect the future.

There are many, many breakthroughs: breakthroughs of new and early treatments (such as preventive measures that will decrease birth defects), on the advantages of an adequate diet, and on the advantages of conducive environment. These should be welcomed, but unfortunately, these breakthroughs and the data available are not enough. Those in special education now must be engaged actively in the problems of special education. This involvement means bringing into awareness those who are teaching in special education but who seem to feel on the outside of this area of responsible action.

The Educational Rights of Exceptional Children.

There are many premises upon which our educational system is founded, and it has been proudly and glibly said, "We believe that every child is entitled to educational opportunity to the extent of his ability; that's what American education is". But what we really meant was that every child and youth who lived where a community was willing to pay for the support of education had this right. We also meant that children and youth who could fit into that mold we call the school had this right, we meant that the "normal child" had this right. But the real meaning of the words has never been felt. We are on the threshold of actually making that philosophy of education come true, but until we stop determining a child's right to an education by his ability to measure up on an I Q test, we really want to be able to say that the schools are there for children to learn to the extend of their abilities.

In an overview of our good philosophy that we never really meant, however, something did happen. Several states began to take an interest and to invest in the education of the handicapped. The federal government became visible, and other states soon decided that if some leading states were supporting innovations in education, then they too should become involved. As a result, there was more wide spread support of education for the handicapped. Probably, none of this would have happened had there not been parents who insisted that their taxes for public education should pay for education of their own children, who might deviate from the normal. More important than this was the fact that parents were willing to bring their mentally retarded and physically handicapped children out into the light, unashamed. They would probably not have done this had there not been scientific research and knowledge about the cause of these disorders and the elimination of the myths surrounding the causes. All of these helped turn the attention of the public toward the problem of providing education so that more of these persons could become productive citizens.

You who are concerned with special education can recall the blind man who caned chairs, or the blind woman who wove rugs, or the town nit wit whom everyone excused and whom everyone helped. In a sense, I suppose people generally were kind because they were glad that they did not suffer these handicaps. But later, we found that there were many handicapped people who did not want or like pity, who wanted help, and the opportunity to contribute. So today this nation seems committed to providing an opportunity for those who suffer handicaps.

Involvement of Educators

On the other hand, I must remind you that the Congress of the United States authorized 51 million dollars to various agencies in support of the handicapped but only $2.5 million was appropriated. I wonder what happened to the rest of that authorization. One thing is certain, the staff of CEC cannot get that money, unless the Congress authorizes and appropriates it. And so, I must ask you: If it was not necessary to get an authorization and appropriation of 51 million dollars, why was it asked for in the first place? What kinds of opportunities would it supply? What kind of training would it enable us to achieve? If it was really important, you and I should have gone after it through our own Congressman, through our own legislators, through the kind of pressure that we know can be applied inspite of many other priorities. I mention this because, as long as we continue to hope that those who represent us will be able to work miracles, we shall not achieve our goal. Each of us must participate; this is the active involvement of which I spoke.

The handicapped must be trained, the gifted must have opportunities, the medical care must be provided, and most of all, there must be employment after training. But these are still the problems that will live with us until we apply our knowledge of know how, and until more cooperative ventures of medical science find ways of preventing retardation and of effecting various cures, As science finds ways of dealing with ancient problems, you and I are very much aware today that we must consider new kinds of problems, such as, damage from the use of drugs. Thus, before we can even successfully concentrate on a curriculum, on materials, on tried and proven techniques in the training of those whom we call special, with certain disorders we are faced with a multiplicity of problems ranging from teacher supply to conservative response about what schools should be. Ours must be an unrelenting effort or else we shall find ourselves in the position we were in in the 19th century. All the research in the world will not make a difference unless we accept the responsibility of keeping those who are responsible for the decisions sensitive to the needs; unless we continue to accept as our special responsibility insuring that this nation fulfills its promise that every child and youth is entitled to an education to the extent of his ability. Then, this nation will deem the training of all of its people education, and the training will be suited to the needs of its people, not simply to those who can fit into the mold, or who cause the least trouble. Then we will have education that all of the people will be able to use. We will then be able to provide for those who are disadvantaged by cultural exclusion, by poverty, by health, by region, by national origin or by religion, and by education that was not suited to the individual. Then, our education will be special because we will once again recognize that all children are different, that they have problems that are different, and that most of all, they are individuals from different backgrounds with different needs and with some basic and common desires.

We know that nutrition is a basic factor now. We know that the nutrition of young children between the age of 3 and 4 can determine to some extinct what kind of operation their minds will be able to master. We know that methods of teaching, different techniques, and different materials can make a difference with children. We know that this nation holds no monopoly on the best of techniques, that even Yugulslavia has something that it can offer us in the teaching of the deaf and the partially hearing.

As we learn these new techniques, methods, and uses of materials, they will do little good unless they are made available to the children. So, for that reason there must be teachers, specialists, diagnosticians, and clinicians of various types to direct the training of these persons; this is another job you and I have to do.

We must also provide teaching methods that will keep young people interested in school. At the end of the day, you are as tired as everybody else is; there are days when you feel completely drained; there are days when you feel like you can toss the students out of a window. You have the human feelings that any other teacher, any other worker, any other professional must have; but I maintain that one exhausted from doing a work that he loves gives a different attitude than one who is not doing a job to which he is dedicated. It will be our attitudes toward our work that will either encourage or discourage young people from entering the field. We have the responsibility to encourage every state to provide the training at the undergraduate level so that students may get an early start and not do as so many of you and I have been forced to do--complete work for a masters degree and then take the training in special education with no increase in salary. It must be possible in every state for young people to make a career of work in special education, there is another demand upon our time.

As we demand that states make this kind of training available, we must also demand that local school systems and total educational associations be alert and sensitive to special education as an integral part of the total educational program. Whether it takes place in a residential setting, in the bedroom of a home bound child, or in a public school facility, administrators must be allowed to think of special education as an exceptional addition to the educational program. This means that you and I must be alert to see that this sensitivity prevails. Already special education is an adjunct, or an after thought to the total education program, and it will remain so as long as you and I permit it. Let's not let a single community or educational system forget that these children are entitled to their educations; no matter whether they are out of school for six weeks or a whole year, whether they are physically handicapped, emotionally disturbed, or gifted, let's point out features of the traditional educational institutions that prove to be deterrents to the child who wants to go to school, but has to give up because the school was built for the perfect. When new buildings are being constructed, why can't we suggest that some features be added, so that the handicapped can be a part of public education? It may be as simple as ramps; it may be as simple as low rails in the bathrooms, but let's take some responsibility so that no one can say that we should have said something beforehand.

We have another great task: to support the efforts that will permit the continuation of much needed research, so that we can seek the causes of, and the remedies and preventatives for, these special malfunctions, so that these handicaps need not occur. "How special can special education become?" It can become as special as the individual demands. New kinds of handicaps, new kinds of disorders, new kinds of needs for the individual differences among us must be the basis on which education will be determined. When this is done, special education will no longer simply be for children in special education but for every child because it will be designed for his individual needs. The price is entirely too great to continue to allow exceptional children to be left to live lives of dejection, uselessness, or destruction.

"How special can special education become?" Just as special as the treatment of diseases, the setting of bones, the transplant of corneas, or the separation of Simese twins. The education of those who suffer these defects, and disorders will determine whether or not they will be contributing citizens or recipients, and it will be their education and training which will, in the end, help to determine whether they will share in this nations affluence, and promise of life, liberty, and the pursuit of happiness, or whether they will be the forgotten ones.

Conclusion

This nation owes its people the individuality of instruction, treatment, and care. Until that day when this nation cares as much about the education of all of its people as it does about its highways, its public buildings, and its moon shots, the education of those in need of special education will continue to be regarded as special.

So, let's remove this stigma of special education in the training of those who still reside in the twilight zone of public education. Let's take to the public and the power forces within our communities and states the cause of public education of the children without: the mentally deficient, the superior ones, the physically handicapped, the hopeless, who tomorrow may be helped by breakthroughs today. Our work is not finished with today's task. For as long as there remains the child or youth whose needs are not being met simply because he is exceptional, special education must be very special.

"How special can special education become?" It can be as special as we want to make it become, and indeed if this nation is to fulfill promise, it can be no less.

REFLECTIONS ON THE NEW EDUCATIONAL TECHNOLOGY

by

Francis Keppel

The most important thing technology has done for education is to make us think about HOW students learn, as well as WHAT they learn. As recently as the early 1950's curriculum experts and publishers alike focused almost exclusively on what students should learn, and had little thought to how the material could best be presented. Lectures and texts were the order of the day. Movies, filmstrips and other aids were used occasionally for illustration and entertainment, but the teacher and the textbook were the unchallenged media of instruction.

The development of instructional technology has highlighted the fact that the use of audiovisual and automated media for presentation of material can often facilitate learning.

Special education has been instrumental in arousing public concern for children with learning disabilities, and in bringing public attention to the fact that learning is a very complex phenomenon. Educators generally are beginning to speak of the learner's "perceptual apparatus" and his "pattern of intellectual abilities." The idea that curriculum can and should be designed to fit the unique abilities of each student is taking hold.

Special Education is the branch of education which historically has been most concerned with the question of how learning takes place; it has also lived most closely with technology, since instruction for children with learing, vision, and physical handicaps is of course intimately related to various technological devices.

Teachers and Technology

Special Education teachers have always geared their instruction to the needs of individual students; ingenious gadgets, special workbooks, storybooks, and games abound in every classroom. Today, however, many teachers, including those of exceptional children, are afraid of a technological takeover; they fear that automated devices will diagnose learning problems, present instructional material, monitor students' progress, and decide when they are ready to move on to something else.

What, then, does instructional technology expect from teachers? We read that the teacher of the future will be a manager, a coordinator of an instructional system. He will no longer be the chief transmitter of knowledge in the classroom; his pedagogical duties, it is said, will be more diagnostic and descriptive.

This situation is not necessary to be resented. Educators are not in classrooms only to give instruction afterall; they are there also to relate the curriculum to personal experiences and current events, to help students learn how to communicate their knowledge and their questions, to inject a note of humor when the going gets rough, to encourage pride in achievement, to create an atmosphere where there is excitement in knowing. What teacher, for example, did not need to put aside preplanned lessons to share thoughts about the life and death of Dr. King? To have meaning, classroom instruction must be relevant to the world outside, and to maintain that relevance, it will be flexible; it must be responsive to unpredictable variables which are nearly impossible to program. In the words of Philip Jackson:

> Teaching is an opportunistic process . . . .
> Stray thougnts, sudden insights, meandering digressions,
> irrelevant asides, and other unpredicted events
> constantly ruffle the smoothness of the instructional
> dialogue. In most classrooms, as every teacher knows,
> the path of educational progress could be more
> easily traced by a butterfly than a bullet.

Teachers will never outlive their usefulness, even though they relinquish some of their instructional function. Teachers and other instructional media need not treat on one another's toes: each has a vital role to play in the educative process.

Sharing Resources

The relationship between technology and education today is still sullied by mutual misunderstanding and suspicion. If technology is going to fit the needs of education and not the other way around, it seems imperative that industry and education learn to work together more effectively.

I would like to propose five areas in which a creative pooling of resources is now required. These are: research and development, evaluation, reporting, distribution, and planned interchange of personnel.

1. Research and Development. Great strides have recently been made in achieving cooperation between public schools and university research programs. Universities are no longer confined to their own demonstration schools for curricular experimentation. But only in a few instances has industry played a significant part in these undertakings, and these have been cases where particularly complicated hardware has been involved. It seems to me that industry might play a significant role both in making and disseminating the findings from some of these programs by publishing and distributing reports, monographs, etc., and by conducting seminars or workshops to demonstrate new materials or techniques and helping to train teachers in their use. These things could be done either by representatives of the companies, or by some nonprofit agent, such as one of the Regional Educational Laboratories or Instructional Materials Centers, with financial support coming from the companies. In short, there are several ways in which industry and education can work together to do a better job of keeping teachers informed about new developments in instructional media and methods than they are now doing.

In Special Education, we are beginning to see alliances between commercial interests and special programs for exceptional children. A few partnerships have been built between private companies and schools for exceptional children: the company subsidizes development of materials in return for publication rights. Some companies are also seeking ways to work with private professional organizations in promoting new programs and materials.

Most liaisons which have been established are very new; the relationships are often tenuous. They may, however, create some guidelines for partnerships in which the capital, the design, and the production facilities of industry are joined with the needs, ideas and expertise of education.

2. Evaluation. It is unfair to expect industry to undertake rigorous testing of products if educators do not demand it. Educators are usually willing to accept enthusiasm from teachers and/or students as evidence of educational validity. Educators don't ask for a comparison with alternatives, even though the crucial question is this: for what purpose, and for whom is any given approach superior to others? Even if we have comparison studies such as those which have been done on programed materials, for example, the information is usually incomplete. We are told that 60 percent of the children learned 20 percent more material, or learned the material 20 percent faster. But we are not told WHICH 60 percent, or how their learning characteristics differed from those of the 40 percent minority. Such data are extremely rare, yet educators need it in order to know which students will benefit most from the new

product or technique.

If evaluation is going to become more rigorous, educators must not only demand it, but they must participate in it. Teachers and administrators must be willing to put up with the disruption in routine, questions from parents, and increased paper work which go hand in hand with experimental use of media and materials.

3. Reporting. Educators and representatives from industry must get together to outline a set of standards for reporting results of experimental programs. As a university and government administrator, I have experienced the frustrations of trying to evaluate and compare results on the basis of incomplete and sometimes misleading information. Now, as president of a commercial company, I am finding this problem equally vexing. Medicine and the sciences have far better defined guidelines for reporting results of experiments. Why not education?

4. Distribution. It is not hard to imagine a day when industry provides a wide variety of collaboratively produced materials and equipment making up "instructional systems" for schools and colleges to consider for purchase. Purchasing decisions will not be easy to make, and perhaps the time has come to recognize that the systematic training of those in education who decide on what to buy is a responsibility both of education and the education industry. Obviously collaboration in this area will not be easy for competitive private enterprise, nor will it be easy for educators who will have to have confidence in the detachment of an industry which has its own products to sell. Yet such collaboration does not seem to be to be beyond our ingenuity, especially if it can be accomplished through some nonprofit mechanism. Interest has already been expressed by some of the Office of Education Regional Laboratories and the Instructional Materials Centers for Special Education.

5. Planned Interchange of Personnel. This area is vital to increasing cooperation in the four areas of mutual concern already mentioned. The consultant or author relationship is essential and should be expanded. But it will not be enough by itself for what seems to be coming up in the way of educational materials and programs. Some type of leave of absence arrangement should be explored in which educators could serve full time in industry and industry representatives could serve in education. School systems might give educators the option of taking six months or a year off, perhaps once every five years, to work under the auspices of a private company, developing ideas for new media or techniques. Industry might also give engineers, ex-teachers, media experts and subject matter experts the option of spending six months or a year every five years in a school setting, to sharpen their perception of the teaching-learning process.

Private companies involved in the education industry have many ex-teachers and other school personnel in their ranks, but in most cases these are people who have left the teaching profession and the academic world. Although their services are vital, they do not take the place of educators who maintain their closeness to the classroom--a fact which educators stress, but which industry often fails to recognize.

Joint appointments are another possibility. They are commonplace in the sciences and medicine--why not in education?

These are the areas, then, in which I feel industry and education must work together if we are to evolve an educational technology which is a real instrument of social progress.

REACTIONS TO KEPPELL'S "REFLECTIONS ON THE NEW EDUCATIONAL TECHNOLOGY"

by

Lloyd M. Dunn

Dr. Keppell has certainly set the stage for us. Where are we going in our field of special education which is concerned with children who are quite different? It seems that we are faced with an issue that involves "attitudes." Special educators are deeply committed to the individual child, and believe that every child is different. Thus some special educators cannot entertain the notion that standard sets of instructional materials or sequential lessons would be useful in teaching the kind of children with whom special education is concerned. Therefore, as a group, we find it difficult to entertain the notions that such instructional materials are necessary to move our field forward. However, we need to look at ourselves and our pupils before deciding to perpetuate this negative attitude. As for me, I have decided well programed instructional materials have a place in special education. I argue most strenuously that we must look toward educational technology if we are going to move ahead. Thus, I will address my reactions to Dr. Keppell's paper by looking at the "why?" "who?" and "how?"

Why?

Why? Why are standardized instructional materials needed in special education? There are a number of reasons. First, we must improve our teaching and this is one way to do it. The alternative is to expect each teacher to create an individualized, hand tailored program of instruction for each pupil. This is our ideal, but it is seldom attained. Unfortunately special education programs tend to be watered down regular courses of study. One way to make special education more special would be to have an array of standardized, specialized, instructional programs at our disposal. The task would be to select the needed specialized programs for a particular handicapped child, modify them as needed, and teach them well. Thus, these programs would be a library of specialized treatments, of which we are now quite bankrupt. Second, standardized and specialized materials allow the use of a wide arrav of people in teaching handicapped children, and yet allow teachers to do an adequate job. There is, and there will be, a critical shortage of master, creative teachers. Their creative talents must be used to devise specialized procedures so they may be applied by others. Thus, advances in educational technology, as Dr. Keppell has already said, will help alleviate the perennial shortage of top level professional teacher power.

Who?

To answer the question, "who?", some 15 to 20 percent of the most creative special educators need to be freed from classroom instruction to work at developing new instructional programs in a series of "instructional materials development centers", scattered across the country. These creative people must be found and given leaves of absence, as Dr. Keppell said, so they may be free to create, field test, and refine a variety of instructional materials. Perhaps the US Office of Education could stimulate such activity by supporting it out of Title VI of PL 89-10.

How?

Once the resources to free these creative special educators are found, "how" do we proceed? First, conceptual models must be evolved upon which to build programs. In this regard, the master teacher will need to join hands with the theoreticians, curriculum specialists, and other behavioral scientists in evolving schema which will be a first step in ordering programs. Topics which might be included, with teach of them requiring a breakdown, include:

1. motor development

2. sensory and perceptual training

3. cognitive and concept formation including language development

4. expressive language training

5. connative (personality) development

6. social interaction training

7. vocational training.

(Under cognitive development alone 50 to 100 training programs might be developed one or more for each of the aspects of intellect.)

Second, special educators need to be organized in groups depending on expertise. Here is an occasion when the team approach, if not the interdisciplinary team, would seem to be desirable. For example, in working up specialized programs in motor development, a team of special and physical educators, occupational and physical therapists, people in recreation, physical medicine, etc. would be needed.

As in the other topics, there is a need for much work in the area of sensory and perceptual training. Many pupils get stuck at this stage. Too often educators begin pushing academic subjects before the child has developed an adequate foundation in this area. It seems that educational technology is more active in visual perceptual training programs than in the auditory training area. This is unfortunate.

We should not divide ourselves by our traditional areas of exceptionality. Generally, special children go through many of the same developmental stages regardless of their disability label. Thus, basic sets of training exercises are first needed in such domains as the seven already suggested.

Finally, as already mentioned, it doesn't seem likely that special educators are going to lose concern for the individual child by devoting some energy to working out rather global programs of instruction. That special educators will follow the "cookbooks" religiously is not anticipated as a problem. Perhaps a few of the poor ones will, but what would they be doing in the classroom without these? Baby sitting? The vast majority of able teachers will use them as points of departure, modifying the lessons as needed, so that each child will make optimal progress. Therefore, it seems that if there is going to be advance in this field, a considerable amount of energy must be invested in the next decade in curriculum development, by freeing creative special educators from routine classroom mangement to devise, field test, evaluate, and refine a variety of specialized programs of instruction for handicapped children.

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